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ECONOMIC AND INDUSTRIAL AFFAIRS

No. 2293

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PROPOSAL TO INTRODUCE STOCKS, BONDS IN HUNGARIAN ECONOMY

Budapest FIGYELO in Hungarian 2 June 82 p 5

[Editorial by Sandor Kopatsy: "Stocks--Publicly Owned"]

[Text] A joint stock company is only advantageous among certain types of enterprises. Even in developed capitalist countries, stock corporations do not predominate in the foreign trade, wholesale trade and construction industries. The railroads, postal service and energy industry are areas in which more government direction than a stock corporation would permit is needed.

Economists debate the value of the division between proprietary and operational functions in Hungarian industry. It is worthwhile to note the advantages of stock corporations over private industries in those areas where that form predominates. In private enterprise, directorship and proprietorship are the same. In stock corporations, the two functions are separated, and the possibility of marketing the corporate worth arises. (I do not wish to describe in detail the reason that in the majority of today's economies it is necessary to resolve these two problems, no matter what stock forms are available.)

The separation of proprietary functions is possible without resolution of the problems of the stock market. This version is promoted by those recommending creation of a board of directors at existing companies that will accept proprietary functions; in other words, it would practice appointment, discharge and remuneration of managers and approval of the strategic goals of the company. The members of the board would be appointed by legally specified authorities and social institutions. The advantage of this solution is that its institution does not cause any shock and greatly reduces the enterprise director's personal subjection to official supervision. Another advantage is that it makes further change easier, since with this development proprietary functions would separate from supervisory authority and the workers' collective for the first time in the history of socialism. The disadvantage is that the problems of capital influx and the capital marketing mechanism remain unresolved.

An Enterprise for Proprietary Administration

My goal is to propose a final solution. Its thrust is conversion of companies into stock corporations. The stocks, in turn, must become the monopoly of a controlled number of companies dealing in proprietary administration. (I do not see the purpose of allowing individuals, stock companies or enterprises to hold stock.)

For the sake of simplicity, let us suppose that the state creates 10 proprietary companies. All stocks must be divided among these 10 enterprises. One method of division could be giving an equal share of all the stock corporations' stocks to each, in which case each would receive 10 percent. The stocks' distributed value, or rather their face value, would be determined by the value of the corporations' resources. The state would provide each of the 10 proprietary enterprises with bonds equal to the book value of the resources of the stock corporations. In a year's time, the enterprises would be required to buy stocks with their bonds. The stock prices in this case would be independent of their face value.

The disadvantage of this solution is that it would cause commotion in the first year, since heavy stock trading would have to take place in the absence of any stock experience. The corporation selling stock would be forced into a totally passive state. A true stock market requires extensive experience and action on the part of both buyers and sellers; thus, I do not see such an initiative as feasible. It would be necessary to clarify the rules of the game of buying and selling stocks and also what investment possibilities are open to the proprietary enterprises besides stock.

I strongly oppose all solutions that would allow a proprietary enterprise to hold controlling stock. In this case, proprietary and operational functions would be separated in theory only, since the sole proprietor would be empowered to interfere in operation, and the control of other proprietors would be lacking. It would be necessary to specify in law that a proprietor cannot own more than 20 or 30 percent of a company's stock.

Considering that the proprietary enterprise would have control of corporations' liquid resources, or would share them, the use of this income would also have to be regulated. First, how far a proprietor can go in withdrawing resources must be specified. Even though the maximum amount is theoretically best, considering present practice, the companies must be assured which resources will be left under all circumstances. Otherwise, the present company directorship would offer strong opposition to reorganization. It is not realistic either to reorganize all company resources now. This is only necessary where some companies can cease operation. In the case of large industries, even in capitalist countries, this is a very rare occurrence.

Bonds for Stocks

The state should require proprietary companies to invest part of their worth in state bonds, so that taxed profits would not have to be reduced to an excessively low level and most amortization could remain. In this manner,

the state would always have a means for maintaining the balance between investment resources and their capacity funds. However, stocks could circulate freely among the proprietary enterprises, under a certain fixed ceiling. This traffic would determine the value of the stock market and the price of the government bonds. The reserve bank would have the power to repurchase these bonds at any time.

The functions of socialist proprietary companies would be based more on capitalist countries' pension funds than on their stock holdings. Proprietary supervision of the individual stock corporations would be provided by a board of directors on which the proprietary enterprises are not represented. This would continue to be a body of appropriate officials and social institutions. The stockholders would merely receive dividends.

The Decisions Are Measured up

It would be necessary to regulate the minimum dividend, just as now the makeup of the development fund is regulated. Large dividends would be in the interest of every company since they would ensure that proprietary enterprises with resources would invest them there. On a national economic level, it would also be necessary to regulate the proportion of company and other inputs in the stock sector. The ratio of credit resources could be much larger than at present if the source were not a one-bank monopoly. When healthy competition between banks takes place, a high level of extraneous investment does not hurt the company's independence while it allows greater state freedom and influence.

Proprietary enterprises would be more active in the stock market if their worth and thus their economic influence grew in the process. I do not find the self-interest of the directors of proprietary enterprises important. The world's best stock handlers are pension funds, at which only one form of financial incentive, salary, is familiar; this is significantly smaller than chief managers' at production firms, or banks. I find it adequate that we should grant our experienced economists the direction of proprietary enterprises and stock and bond activity in addition to a salary appropriate to their trade education. For this, we need smaller enterprises but more information and experience. The type of law that permits stockholders complete access to the company's activity and plans for the future is indispensable.

The part of my suggestion that will generate the most complaint is that I do not grant the stockholders the right to appoint directors and managers. I find it a perfectly acceptable solution that directors are not appointed by a minister. The stock exchange will indicate through prices that it is or is not satisfied with an important director. The stock market mechanism is an index of the stockholders' opinion about the leadership. Thus the appointing board or the supervisory board will always receive a critique of its performance.

I find it very important that we should begin to separate proprietary functions. The most successful system and method in socialist situation can only be arrived at in practice.

9890

CSO: 2500/275

JOINT VENTURES WITH WESTERN COMPANIES FAVORABLY VIEWED

Budapest FIGYELO in Hungarian 2 June 82 p 3

[Article by Laszlo Akar: "Joint Ventures in Hungary"]

[Text] The Ministry of Finance decree permitting foreign businesses to create joint companies in Hungary with Hungarian companies was issued 10 years ago. The goals of this action--speeding technological development, aiding reform of the productive system, strengthening domestic and foreign market positions, modernizing administrative and managerial methods, etc.--are well known. (The creation of joint companies with COMECON nations is also of primary importance. Such joint companies have long been active in Hungary, for instance, Interlighter, Agromas, Intertransmas.)

On the basis of the decree, which appeared in 1972, contracts for nine joint ventures in Hungary have been created; most are already in operation. They have fallen far behind expectations.

It is interesting to observe the chronological appearance of the joint ventures. The first, Sicontact Ltd., began operations 2 years after the decree. In the same year, Volcom Ltd. was founded. In the following 4 years, only one new company, Radelkor Ltd., was created. The Central European International Bank was founded in 1979. Since then, five companies have requested and received recognition as joint companies: B + Z, Casino Budapest Ltd., Sphero-EVIG Ltd., BCR LILLY Ltd. and QUALIPLASTIC Ltd. At the first, Sicontact Ltd., an increase in capital and more productive activity have been undertaken.

The capital means and market standing of the foreign companies are varied. Among them are multinational companies as well as specialized small businesses. In some cases, the joint ventures arose as the product of decades of cooperation between the partners and in others the joint venture opens up the Hungarian market for the foreign partner.

Opening Markets

The newer ventures, with one exception, also perform joint production. Their goal is marketing their jointly produced goods on third markets. The nature of this market expansion is different if the dimensions of production clearly

exceed the demand on the Hungarian market from the start. In this case, the partners specify in their contract that they will open and release their market contacts to each other and thus the jointly produced exports enjoy all the advantages that the partners had earlier ensured for themselves. In other cases, in the first phase the Hungarian market demand clearly means a new market for the foreign partner, and the product is phased into foreign markets only after Hungarian demand is filled. Through examination of the circumstances for the development, it appears that many factors were involved in the difficult inception. It was unlucky that the decree of 1972 excluded direct participation in production. The amendment of 1977 that permitted joint production certainly had a role in the development of events. That he can participate directly in administration of the company, obviously increases the businessman's security. It also clarifies for foreign companies that Hungarian statutes protect the rights of proprietors. It is the duty of the owners in the partnership to divide the rights of administration in questions concerning the company's operations, such as technological development, marketing politics, etc. There is no obstacle to unanimous decisions for the partnership contract in these decisions, regardless of the degree of ownership of each partner.

Even today, the degree of initiative in Hungarian companies is insufficient but in the beginning it was almost totally lacking. Despite numerous suggestions, the creation of joint companies as an option was not considered systematically either in industrial legislation or simple expansion of industry.

Hungarian public opinion and economic conditions, which today encourage enterprise and new forms, are certainly qualitatively different than in the pioneering years of the early 1970's. The lack of such conditions was a deterrent in the beginning.

Already instituted and projected economic legislation will have a favorable effect on joint ventures: for instance, the tighter relationship between domestic and world prices, the institution of a unified rate of exchange, planned controlled foreign convertibility for the forint, the development of background industry, etc. It seems also that in foreign companies the prejudices of the early 1970's against capital investment in countries of a different social system are disappearing. This change can only be strengthened if our economic planning legislation is comparable to rational decisions abroad, even in international comparison.

It is likely that the founding of the international bank encouraged the creation of more joint ventures. The presence of six prestigious foreign banks embodies the advertising slogan "our man on the spot" for international banks. An activity of the Central European International Bank is the promotion of Hungarian partnerships for foreign companies. The participation of the bank is above all moral support for the foreign partner. We already have been informed of initial results.

Changes in the international market also affected the founding of joint ventures. When the decree was issued, in 1972, the world economy was in an upswing. The search for workers has been replaced by employment concerns. This condition certainly played a part in the slow development of foreign ventures.

Expansion of marketing possibilities and markets is of primary importance in all economic situations. In lasting economic declines the importance of this expansion grows, augmented by the political decisions of certain countries to increase employment. Thus it is understandable that all market contacts that offer the possibility of lasting export deserve attention, even if the necessary investment lies outside national borders. Finally, a joint venture represents an assured market status for those parts and machineries incorporated in the product of the joint company. This point is especially attractive when the new joint venture offers marketing possibilities previously closed to one partner. Although the export of finished products is often more profitable than that of parts, it still represents market expansion in comparison with the previous situation.

A Higher Standard

These efforts of the partners are quite understandable. The Hungarian companies do not hide the fact that the important goal of their ventures--besides more efficient fulfillment of domestic demand--is the expansion of exports. It is also justified that the companies choose a convertible currency as the monetary unit of their increased export marketing. This solution ensures that input in convertible currency will likewise reappear as currency output.

This basic, main effort does not exclude the possibility that the joint company will market part of the given production in countries of nonconvertible currency but the percentage of imports obtained in convertible currency for these products is significant. Transfer of the appropriate sum to the foreign partner means currency loss from the profits of the joint company. Thus, on nonconvertible markets, the joint company can sell in significant amounts if some unique construction that can make up for currency losses can be worked out.

The authorities with jurisdiction for economic regulation always pay special attention to the handling of joint ventures. In the interest of dealing equally with Hungarian companies, joint companies can also be levied the differential producers' excise tax in the event of export.

Double Taxation Ruled out

In recent years, joint ventures have been further promoted by international agreements concerning avoidance of double taxation. The Hungarian economic ministry takes the lead in promoting two-sided economic connections, even in the important opinion of developing countries. The problem of double taxation had to be solved even in our own country. The solution ensures that the Hungarian parent industry adds to its taxed development funds through its share of the taxed profits of the joint company.

The development of joint ventures is also aided by the fact that since 1979, unlike general practice, the schedule of charges for the budget has not changed. The 40 percent profit tax is among the lower ones in international comparison.

An institutional system for the handling of joint ventures as a main activity has not yet been worked out. Foreign trade enterprises have accomplished much to date, although they judge the companies in terms of their main activity, simple export-import concerns. They are primarily active in founding foreign trade companies that strengthen their own market standing. However, it is also understandable that a producer who is interested in a joint production company but inexperienced in international matters will have difficulty beginning the complex series of talks necessary for founding a joint company. Thus a specialized system for creation of joint companies, equally at home in the domestic and international community, is decidedly lacking. Its rudiments can be found for instance in Intercooperation, which has already brought about several successful joint ventures. It would be good if the active mediation of Interinvest were also available.

Our statutes do not prohibit the creation of a tax-free area for production. Examination of this possibility has begun.

The complicated procedure for gaining permission for a joint venture is a common source of complaint. The authorities, in fact, deal with a concrete matter in two ways: first in granting permission for commencement of international talks and then in approval of the final partnership contract.

This two-step procedure can be explained by lack of administrative and corporate experience. It would be useful to simplify the daily schedule. In practice, granting permission for talks has become a form of thinking aloud. At this time, initial ideas are clarified and the first conception is amended through new ideas and options. At the same time, corporate and official viewpoints are assimilated. This assimilation becomes useful in the second process, where it simplifies approval for the contractual partnership. For the most part, the companies find this useful.

One solution is to make the licensing procedure one-step, while the granting of permission for talks becomes an optional consultation. It can be left up to the companies to decide this. Of course, this solution means that the officials will first review an already decided contract. In this case, both the Hungarian and the foreign company must prepare for possible major changes in their finished contract, or even denial of permission for the joint venture. However, the consequences of such a possibility can be lessened if the company accepts the option of a preliminary consultation.

From the attitude of Hungarian companies and from the talks in progress, it appears that interest in joint ventures is increasing. Signs of rapprochement are apparent in more and more foreign companies. Much depends on the development of world politics and world economics. In an atmosphere more relaxed than today's, it is certain that the second decade of joint ventures will be more successful than the first.

ROLE OF COMPUTERS IN ADMINISTRATION STUDIED

Budapest NEPSZAVA in Hungarian 21 May 82 p 5

[Interview with Dr Lajos Varga, director of the Computer Applications Department of the Central Bureau of Statistics by Antal Szalay; date and place not specified]

[Text] An office without paper is not an unattainable dream. At least the computer systems of state administration are developing in this direction world wide, hallmarking the rapid and accurate administration of public affairs and the democratization of the dialogue between the administration and citizen. This development is served by the development of various methods of information organization and technical modernization. The last 10 years of the modernization of administration information organization and the implementation of the computer central development program--as reflected by the paperless office and from the viewpoint of the citizens--have not been entirely smooth. Thus, for instance, in connection with the recording of population, personal numbers have been introduced, but their use is still unclear. In regard to the other development direction, the large computer systems of the central administration do not provide the councils with adequate assistance in their role as area managers, and thus, for example, the so-called black, local and obsolete keeping of records is still necessary.

How will the achievements of the past 10-year development be felt by the clients of public administration? Will the current modernization result in advantages or disadvantages for them? We discussed these problems with Dr Lajos Varga, director of the Computer Applications Department of the Central Bureau of Statistics.

--The computer central development program is in part targeted to the development of public administration applications and is of coordinative nature in this area--said Dr Lajos Varga.--It mainly relates to the coordination of work done in various areas and to the further development of the achievements made.

[Question] What are the main directions of state administration?

[Answer] One of the most important goals of the program is the implementation of real estate, population, legislation and public vehicle registration, i.e., to create of computer systems for their function. The other branch of the program is the modernization and the coordination of the internal information

systems of state administration. Here I must emphasize the common development of the National Planning Bureau and the Central Bureau of Statistics to coordinate their significant data files. Their goal is to permit the colleagues at the four principal authorities to access data from any of the significant data files for their important decision-preparation activity.

[Question] Thus data and information flow to the computer from many locations. Are these streams sufficient and satisfactory? Can the offices and bureaus perform this task?

[Answer] One of the major obstacles of the program is that the organization of office work is backward in our country. Document handling and record keeping are obsolete, and thus access to data is difficult and requires a great amount of work. The mechanization and automation of office work is in its infancy. In spite of the fact that this does not require expensive computer tools. Most of the problems could be solved by inexpensively punched cards and well-organized cardboard boxes. Thus the resources flow unevenly and sometime dry up.

[Question] Were these the reasons for the difficult preparation of the census?

[Answer] In part, yes. In the past, computer experts did not have to deal with this amount of data; experience was lacking. There were not enough computers either. At the same time, we would have needed regional records in order to base the central record on them. The preparers of real estate records were struggling with similar problems. In the future, these regional centers will be established.

[Question] Obsolete offices, a lack of decentralization; thus the collection, processing and flow of data are difficult. Did not we start to build the house from the roof?

[Answer] We cannot say this categorically. Observing the activity of other, even western, countries, we can see that they struggled or are still struggling with similar difficulties. Furthermore, in our country, few things provided an impetus for the better organization of office work. For example, the modernization of council management has not been placed on the agenda until the last few years. At the same time, everything has a financial correlation. The establishment of regional records had already been included in the plan during the preparation of the central program, but could not be implemented because of lack of funds.

[Question] Does the central development program stimulate the councils to modernize their work?

[Answer] Although I cannot give you a factual example, the answer is yes. The fact that the central state administration has been computerized encourages the local councils to move at a faster pace. The difficulties in this case are caused by the fact that the councils have to deal with many organizations, ministries and principal authorities; so this information system can only be developed from the bottom up. Currently, the councils are keeping about 300 sets records; out of these, 70-80 are relative to individuals. These must be modernized, consolidated and coordinated with the systems of the higher organs. The multifaceted nature of the task is apparent.

[Question] Can we say then that the network covering the country is being woven and the goal of the central development program is precisely a coordination of this effort?

[Answer] Yes, but the threads are still missing in many places and in some others are still not consistent.

[Question] Those already mainly using computerized systems complain that their speed and applicability is unsatisfactory, and, as a result of various desires, manually kept records are also needed or often used parallel with the computerized records. Because someone who must pay his taxes, for example, is interested not only in the final sum but also the reasons for the payment.

[Answer] For the most part, this is not a fault of the computerized systems, but rather results from the inadequacy of the information organization. This can, of course, be hindered by several things, such as the obsolete work methods of the state administration organ. Other obstacles may be--although less frequently--of human nature. Thus besides the computerized records, for the time being, manually kept records are needed in public administration, in part as a result of previous planning and in part as a result of subsequent development.

[Question] Are we not rather talking about the citizens losing their individuality and becoming a piece of data?

[Answer] No, since their data can be found somewhere, if not in the memory of the computer. There is no reason why these could not also be stored in the machine. Computerized data processing has two important goals: the rapid, accurate and ever broader supply of data to the management organizations to make their decisions and, at the same time, to perform citizen transactions as fast as possible. In this process the computer is merely a tool. But an effective, good and efficient tool.

[Question] If the computerized records are prepared and the opportunity to connect these systems is offered, is it conceivable that the experts involved with sociology will be able to perform various model experiments and examinations using the computers?

[Answer] Of course this is possible, since, among other things, this is one of the main objectives of the applications. However, this activity cannot jeopardize the right of those in the records not to have their individual data made public without their permission by those keeping the records.

[Question] The protection of individual rights is a complicated problem. For example, the State Insurance Agency knows even before the new automobile owner reports whether he should be persuaded to take out auto insurance. Thus it reviewed (or must have reviewed) the financial matters of the individual. Computers facilitate the organization of data. Is increased protection guaranteed?

[Answer] Even double protection: legal and technical. In connection with the foregoing, a decree has been published by the Ministry of Interior, according to which every ministry and principal authority must decide what data to protect and provide the technical means for the protection. The other guarantee

resides in the fact that only those data must be recorded which are needed for the decisions and the work. The statistical data supply is regulated by the statistical law and provides increased protection for the information, independent of their processing.

[Question] To what degree are data protected in countries where the application of computers is much more advanced than in ours?

[Answer] For understandable reasons, very strictly. Technical literature presented a case where a real estate agent managed to access health records and based on these decided with whom he would deal and what type of rental contract he would offer. In capitalistic countries, legal regulations protecting data are introduced after such abuses. In our country, individual rights are protected by a clear law, independent of the technology; i.e., it needs only to be applied to the area of machine data processing, record keeping and services. We are this far ahead of capitalistic countries.

[Question] Are the advantages of computer technology reduced by wide-spread data protection?

[Answer] Protection must be present in the relationship of the administration and the citizen, but if this is satisfactory, then no. Moreover, the decision-making process of the state administration generally does not directly need personal data of any particular individual. The wide-spread use of computer technology brings up a series of similar questions, but so far these have been successfully answered, and the related experiments research and development programs also promise success.

9901

CSO: 2500/261

UNPROFITABLE ENTERPRISES SURVIVE DESPITE REFORM

Budapest NEPSZABADSAG in Hungarian 2 June 82 p 10

[Interview with Laszlo Nyikos, deputy director of the Ministry of Finance's inspection division, by Katalin Bossanyi: "Enterprises--In a Difficult Situation"]

[Text] It appears from our report on last year's balance sheet that there has been an overall improvement in the economic operation of the enterprises and cooperatives. At least, this is indicated since the income situation of the economic operating units--the profits and the rate of wage increases--as more favorable than planned. In spite of this, some enterprises and cooperatives still operate at a loss, or with a shortage of funds. We talked with Laszlo Nyikos, deputy director of the finance ministry's inspection division, about the group of economic operating units that over the short- or longer-term got into a difficult situation and about the mutual effects of enterprise behavior and regulation.

Why Do They Have Losses?

[Question] What does last year's "cashier's quality control" of the inspectors show; compared to previous years, is the number of those operating at a loss in industry higher or lower?

[Answer] Some of this and some of that show up. In the national economic branches other than agriculture, we found only 20 units, according to their balance sheets, operating at a loss; this is fewer than in the previous year. At the same time total losses increased fivefold. The Heves Megye AEV [State Construction Enterprise], the Bridge Construction Enterprise, the Ibrany Construction Industrial Cooperative and the Hajdu-Bihar Megye ZOLDERT [Vegetable and Fruit Sales Enterprise] have suffered repeated losses. Of the economic units operating with losses, 9 are supervised by ministries. Two-thirds of the losses recorded in industry and in the construction industry are concentrated in four enterprises. These are the LKM [Lenin Metallurgical Works, of Diosgyor], the Office Machinery and Precision Mechanics Enterprise, the Kecskemet Enamel Goods and Bathtub Factory and the Salgotarjan Iron

Foundry and Stove Factory. The latter two became independent last year. Even though they also operated with losses before that, in 1 year they have significantly decreased their losses. No enterprises are operating at a loss in the light and chemical industries, while the amount of losses has increased in the construction industry in spite of the fact that one fewer economic operating organ reports losses than in 1980.

[Question] What caused the losses?

[Answer] There are external as well as internal reasons. But primarily they were market reasons: demand for the products or activities decreased, and in connection with this the prices are also lower. Because of the world market decline, for example, the world market prices of ferrous metallurgical products have greatly decreased, while production costs could not be decreased. The balance sheet data do not directly show the reasons for the losses, but in our experience the lack of entrepreneurial readiness, inflexibility or the lack of organization, and the use of faulty management methods may also be reasons. At some economic operating organs with losses, the large amount of damage discards and inventory devaluations also increased the expenses.

[Question] What is the solution?

[Answer] Twelve enterprises and cooperatives will be able to handle their losses with their own resources (by using their reserve funds and other enterprise funds) but external intervention will be necessary at the others. There is a [are] cooperative[s] receiving help from the OKISZ [National Federation of Artisan Cooperatives], two enterprises in Heves Megye will be reorganized, and four--the Pest Megye Council-Operated Construction Industrial Enterprise, the Szeghalmi [sic] Construction INdustrial Joint Enterprise, and the ZOLDERTs of Hajdu and Komarom Megyes will be closed down. In accordance with the principles heard for over a decade, we have finally reached the point where we throw no additional liferopes to those who continually operate poorly.

[Question] Even though the lack of funds is not yet a loss, it indicates that there is a problem--there will be problems with the enterprise's economic operation. Why did the enterprises, struggling with the lack of funds, get into such a situation?

[Answer] We saw a lack of profit-sharing funds at 7 enterprises; 18 enterprises and cooperatives have indicated that this year they expect a lack of development funds. The number of those struggling with such problems has decreased but the extent of the fund shortages has significantly increased. For the most part the lack of profit-sharing funds was caused by losses (six of the seven economic operating units with lack of funds are also operating at losses), or by wage raises without efficiency improvements or in excess of them. One-half of the enterprises without development funds are in the machine industry. Most of these took out large loans in recent years and accepted their repayment obligations in the previous economic environment. But the standards of their economic operation and the discovery of their

resources did not improve to the desired extent; they were unable to keep up with the increasingly severe conditions. Fewer enterprises became independent last year and got into a disadvantageous situation because of a not-too-fair distribution of assets. The elimination of the lack of funds in most cases is possible only if the bank reorganizes the repayment of existing loans. They cannot solve the problem on their own strength, because either they have no mobilizable reserve funds, or they must spend them to cover their losses.

The Evaluation

[Question] If we compare the value of the losses with the total enterprise profit, we see that this is only 2 or 3 percent of it. Is this picture a realistic one? Are we really doing this well?

[Answer] Indeed the loss is even smaller than this, because accounting within the trust or the major enterprise makes the losses of the member enterprises or factory units "disappear," and thus the national economy's losses according to the balance sheets do not even amount to 1 percent of the profits. But one must not draw excessively confident conclusions. One must not, primarily because according to this the economic operating level of the decisive majority of the Hungarian enterprises and cooperatives would correspond to the requirements of this age, when this in fact is not so: at least one-third of them fall short. In interpreting the small extent of the losses, we must not forget that--even though it has decreased in comparison with the previous years--the subsidy content of enterprise profits is still very high. Because of this, it is difficult to get a clear picture.

We have no reliable evaluation method by which we could compare the competitiveness and efficiency of our enterprises with, for example, the international field. Even though "comparison to itself" can provide some basis for comparison, it is not enough for real clear sight. For example, our division has been watching with particular attention--based on the average of the speciality branch--the economic operation of the so-called low-efficiency enterprises since 1978. However, we have no reliable data on just where the speciality branch itself stands, what its chances on the world market are. We have established a special computer ranking of the activities of the enterprises on the basis of several indexes that characterize efficiency. This does not provide a method for error-free measurement but it does provide an opportunity for some kind of orientation. If we compare this ranking with the list of enterprises that have won the title of excellence, often we find no matches, this points to the contradictions in making the evaluations.

All these things illustrate that substantial changes and more consistent implementation of the normative regulation are needed in much broader circles than the list of those operating at a loss. In this case the bookkeeping balance sheets would also show a much more differentiated picture. Even though the number of economic units operating at losses

would be larger, we would also probably have many more economic operating units that can be classified effective even by world market standards. In the final analysis the means needed by the economic operating units in a difficult situation to keep them on their feet, must even today be taken from those enterprises and cooperatives that are better than the average. Thus, modernization of the production and product structures continue to progress at a very slow rate. But, without it, the reestablishment of the foreign trade balance cannot be imagined. We continue to maintain production at a loss, while those who produce outstanding results have only more moderate opportunities for growth.

There Is Much Subsidy

[Question] Last year the increased profits of the enterprises derived not only from improved efficiency and better marketing work but also from the increase in producers' prices and from various benefits. What is the reason for seeking the direction of least resistance?

[Answer] The various preferences, subsidies and individual evaluations continue. Of course, by this I do not mean to question the role of special measures and exceptions in managing the economy. For the very reason of the general business slowdown--mainly in the crisis branches--the role of state intervention is increasing even abroad. But this continues to cause many problems, in that the requirement of normal activity is not valid in the same manner for everyone. We can also measure the harmful effect of this in the behavior of management and of the enterprises. The economic operating units do not seek the way to success primarily around their own home base but rather try to win easier conditions than the average. But the real tensions are caused not just by being granted some such favorable treatment on occasion but rather by its spiraling effect. Since various ministries and top-level national authorities host the various elements of the regulatory system, comprehensive evaluation is difficult to ensure. At the same time, these institutions cannot always sense all the consequences of the various individual measures--easements and restrictions--in some cases, even within their own organization. I am thinking here, for example, of the granting of wage preferences in certain cases. This is not surprising, since for the most part we are dealing with "mechanical conforming" interventions. This also is the reason in this country for much fewer enterprises ripe for reorganization than would be realistic.

[Question] Yes, but in the majority of the enterprises and ministries they can also provide economically acceptable reasons for these individual measures.

[Answer] Most of the time it is easier to prove why something cannot be accomplished than to go ahead with goal-conscious work. An enterprise in a difficult situation can line up innumerable "objective obstacles" to explain its own report card. They often succeed in doing so. Day after day it can be seen during the course of an audit that the various individual price, wage and financial measures did not solve, or only partially solved, the problems of those requesting the favored treatment; rather they only

postponed them. In addition to decreasing the effect of the economic and market forces, this also carries the danger in itself that with time the enterprise taken under the "protective umbrella" continues to lose its competitiveness. For example, seven of our respected machine industry enterprises would have been weeded out through the profitability screen of the competitive pricing mechanism introduced 2 years ago, had their problems not been solved by the most frequent compromise; that is, by subsidy. Of course, the reason was an acceptable one in their cases, too: market conditions are unfavorable, discriminative measures are being applied against them, etc. However, competition has gotten even sharper since then.

By the Same Measure

[Question] A new assignment of the division is to analyze the effect of the regulations jointly with other departments. What has been the most important experience of the last year?

[Answer] In spite of all the central intentions, our regulatory system is still not able to relay the strict requirements fully and force an enterprising behavior. It also plays a role--due to the world economic situation--in several central measures being enacted that changed the extent of some of the earlier elements of the regulation. This caused uncertainty in some enterprises and suggested certain tactical steps. But a more definitive feature is that the enterprises continue in not being sufficiently sensitive to costs; many of them also do not feel the effect of the world market sufficiently and directly. Also, certain elements of the regulation are not consistent with others; the most glaring example of this is today's income regulation, which "regulates" the payment of wages almost independently of the enterprise's actual performance. This even causes a restraint on performances--pulling back the better ones into the region nearer the average--instead of the desirable differentiation. For this very reason, in addition to a coordinated modernization of the economic regulatory system, changes should be made not so much in the content of the regulations as in their style. This would mean that only exceptions verifying the rule can be the reasons for occasional intervention and subsidy. This would probably cause much more conflict to the enterprises in a difficult situation than exists today. But the question is, if the national economy, the national budget continues to take over the difficult situations of those who, for various reasons, continuously perform poorly in their economic operations, will this not result in even more significant tensions?

8584

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SPECIAL CURRENCY EXCHANGE RATE PUBLISHED

Warsaw TRYBUNA LUDU in Polish 21 Jun 82 p 7

[Text] Announcement of Exchange Rates Table No 26/82, effective 21 June 1982, by Stanislaw Majewski, president, Polish National Bank, on 21 June 1982.

1. Foreign exchange rates for commercial and noncommercial payments from table 23/82 dated 8 June 1982 remain unchanged.

In purchases of travelers' checks for rubles, issued by the USSR Foreign Trade Bank and payable outside the USSR in the currency of the country where cashed, an exchange rate of 11,797.10 zlotys per 100 rubles is applied.

II. Foreign-Currency Exchange Rates in Zlotys for Countries of the Second Payments Area [Capitalist Countries]

[Table on following page]

Exchange Rates Table No 26/82

Country	Curr Symb	Currency	Foreign Exchange		Money		Average
			Purchase	Sales	Purchase	Sales	
			3	5	1	2	
Saudi Arabia	771	1 rial***	24.80	25.04	--	--	24.92
Australia	781	1 Austral.dollar	87.84	88.72	86.51	90.05	88.28
Austria	786	100 schillings	498.27	503.27	490.75	510.79	500.77
Belgium	791	100 francs	182.90	184.74	180.14	187.50	183.82
Denmark	792	1 kroner	10.18	10.28	10.03	10.43	10.23
Finland	780	1 markka	18.14	18.32	17.87	18.59	18.23
France	793	1 franc	12.63	12.75	12.44	12.94	12.69
Greece	724	100 drachmas	125.15	126.41	108.47	128.30	125.78
Spain	785	100 pesetas	77.76	78.54	76.59	79.71	78.15
Holland	794	1 florin	31.74	32.06	31.26	32.54	31.90
India	543	100 rupees***	898.67	907.71	--	--	903.19
Ireland	782	1 pound***	120.85	122.07	--	--	121.46
Japan	784	100 yen	33.77	34.11	33.26	34.62	33.94
Yugoslavia	718	100 dinars	170.20	171.92	147.52	174.48	171.06
Canada	788	1 Canad.dollar	66.74	67.42	65.74	68.42	67.08
Kuwait	770	1 dinar***	295.65	298.63	--	--	297.14
Lebanon	752	1 pound	17.25	17.43	16.99	17.69	17.34
Libya	651	1 dinar***	287.42	290.30	--	--	288.86
Luxembourg	790	100 francs	182.90	184.74	180.14	187.50	183.82
Norway	796	1 kroner	13.78	13.92	13.57	14.13	13.85
Portugal	779	100 escudos	115.87	117.03	100.43	118.78	116.45
FRG	795	1 mark	35.09	35.45	34.56	35.98	35.27
United States	787	1 dollar*	85.10	85.96	83.82	87.24	85.53
Switzerland	797	1 franc	40.80	41.22	40.19	41.83	41.01
Sweden	798	1 kroner	14.17	14.31	13.96	14.52	14.24
Turkey	627	100 pounds	54.90	55.46	47.59	56.28	55.18
Great Britain	789	1 pound**	149.65	151.15	147.39	153.41	150.40
Italy	799	100 lira	6.24	6.30	5.40	6.40	6.27

*Valid also in clearing accounts with the following countries: Bangladesh, Brazil, Ecuador, Greece, Iceland, Kampuchea, Colombia, Lebanon, Pakistan, Peru and Turkey.

**Valid also in clearing accounts with the following countries: Nepal and Pakistan.

***The Polish National Bank does not purchase money in these currencies.

CSO: 2600/716

PRODUCTION INCREASE IN APICULTURAL SECTOR DISCUSSED

Bucharest REVISTA ECONOMICA in Romanian No 19 14 May 82 pp 11-12

[Article by Ovidiu Grasu: "Apiculture - A Pursuit With Broad Opportunities for Profitable Development"]

[Text] As an occupation of the inhabitants of this land having a multimillenia tradition, beekeeping is today in the picture of our agriculture and of great crop and animal production in an unjustifiably modest position if we keep in mind its important potential as a producer of a basic biologic foodstuff that has great nutritional value and important therapeutic properties, as a supplier of specific raw materials for a broad series of food products, pharmaceuticals and cosmetics, as an export product that does not require imports for its activities and as a source of supplementary income for numerous residents in villages and even the cities.

The complex, scientific view of our party and its secretary general regarding the new agricultural revolution, which also includes the return to using certain traditional resources as once of its significant points, also involves reconsidering beekeeping. In this regard, the 12th RCP Congress outlined important tasks referring to the permanent improvement of the bee stock and the judicious use of the basic melliferous reserves. By the end of the current five year plan, the production of honey will have to reach 15-17,000 tons, with a level of efficiency of 17-20 kg per hive. In order to achieve this requirement, it is necessary to take measures of a technical, organizational and social nature. There is need for the broadest possible segment of the public to be made aware of its advantages and to be broad up to date regarding the main requirements of beekeeping technology and for possible solutions to be adopted so that the strategy for the development of this sector will be combined with the measures to protect the environment.

The program regarding self-management and territorial self-supply for providing the populace with animal and crop agricultural products during the 1982-1985 period offers a favorable framework for the qualitative improvement and quantitative growth in the activities to raise bees.

Favorable Economic-Natural Conditions

The natural conditions that characterize our regions of plains, hills and mountains, which have a great variety of spontaneous and cultivated melliferous plants, represent an important resource for the development of beekeeping. Even back in 1850 the agronomist scholar and agrarian economist Ion Ionescu of Brad urged: "In collecting pollen and the nectar of the flowers and converting it, by using bees, into honey and beeswax, you do not have to use a plow or have land and skill. For that reason, let us all work together to that each villager will have a beehive at his home."

The species of nectar-bearing and pollen-bearing plants in our country are numerous, with some of them having an unbelievable productivity and intensity. Beginning early in spring (in some years even in February), the successively flower until late fall, when the frosts arrive, with the colonies of bees thus having the optimum conditions for collecting over a period of at least 8-9 months. Thus, the approximately 660,000 hectares of fruit-bearing and viticultural orchards offer a valuable source for maintaining the bee colonies, which, for their part, ensure the pollination of the orchards. The basic flower for the bees in our country is the acacia. The over 100,000 hectares of acacia in orchards, as well as in more or less separate stands in the villages or along the banks of rivers, annually provide large quantities of the best quality honey. Under normal weather conditions, the acacia's period of flowering varies in Romania between 8 and 14 days. Although a short period of time, the harvest is of great intensity, with a colony of bees obtaining 8-12 kg of honey each day.

Also of special importance are the linden tree groves which cover an area of over 70,000 hectares and from which, during favorable years, a colony of bees can produce 15-20 kg of superior quality honey. A large melliferous source is also represented by the over 4,470 thousand hectares of pastures and hayfields which provide the bees with an abundant and continuing harvest over a long period of time. Among the melliferous plants that are grown, the most important is the sunflower, which covers an area of over 500,000 hectares. It represents the basic melliferous crop in the plains regions, providing the main summer source. The period of flowering lasts between 20 and 30 days and the production of honey achieved by a colony of bees varies from 12 to 40 kg, depending upon the variety and the pedoclimatical conditions.

The variety and abundance of melliferous flowers in Romania and the abilities of the native bees (which constitute a separate race - *Apis mellifica carpatica* - created over the centuries under the specific climatic, terrain and floral conditions) to efficiently use them have stimulated the year-to-year growth of the number of bee families that are kept in systematic hives of great productivity. At the same time, a tradition has been created of seasonally moving the hives to different sources, the "pastoral" method of hivekeeping.

The Advantages of Raising Bees

The main product of beekeeping - natural honey - is a foodstuff of special properties, composed of glucose, fructose, different proteins, aminoacids and

enzymes. It also has therapeutic value, being used in the prevention and treatment of certain afflictions of the digestive track, the cardio-vascular system and the nervous system. Other apicultural products, beeswax, queen bee honey, beehives and pollen have a special role in medicine, cosmetics and so forth.

Bees play a special role in agriculture as the ones who pollinate the entomophilous plants. Pollination by bees is an important method for increasing the production of seeds and fruits under the conditions of intensive agriculture. Living in large families, in a short time bees can saturate and pollinate large areas of entomogamous crops. (In this context, we note the insufficient attention that our agricultural specialists have given to research of biological methods and to the deeper study of their effects. Recently, a reconsideration of these methods has been noted and, certainly, the new biological revolution in agriculture will have its say). For example, in the case of the sunflower by having bees do the pollination production increases by 25-30 percent, and at the same time achieving a significant harvest of honey. The research recently done in this field has demonstrated that by using bees in pollination the value of production increases by 1,800 to 2,000 lei per hectare. With regards to the fodder crops, it is sufficient for us to point out that after pollination the production of clover seed increases by 50 to 60 percent, with important harvest increases also being obtained for white and red clover, esparcet and others.

Another advantage of the bee lies in the better and efficient use of land and especially that land which is inappropriate for agriculture. By raising plants or trees that have melliferous flowers on this land, apicultural products can be produced that have a high nutritional value and low costs - an economic efficiency which, in many cases, could make this land competitive even with fertile lands.

We cannot omit this branch's participation in consuming actual labor at reduced levels and the relatively small costs to train the workforce, compared to the other branches of agriculture. At the same time, beekeeping can be a complementary branch for other agricultural activities, contributing to the elimination of the seasonal nature of the work processes in agriculture.

The energy requirements in apiculture are minimal. In exchange, its products can replace a series of energy-consuming products (sugar, certain medicines, different substances used in the tanning industry, in perfumes and so forth). Compared to sugar, honey has a series of superior nutritional qualities, being able to replace it to a great degree in individual and collective consumption and in the production of certain superior food products, under the conditions that it be obtained and sold in sufficient quantities and at an acceptable price. The sugars in honey that are taken into the body are completely burned, right to the state of carbon dioxide and water, releasing energy in all the stages of decomposition through which it goes. The amount of energy released by a gram of honey equals 4.1 calories, being made fully available to the body.

The essential difference between bee's honey and commercial sugar is, however, the fact that it contains certain non-sugar substances that have beneficial effects upon the organism - vitamins, mineral salts and enzymes.

Achievements and the Future in Romanian Apiculture

With regards to the numbers of bee colonies (approximately 1,120 thousand), Romania is in first place in Europe, and with regards to production (approximately 14,500 tons in 1980) it is in second place. Our honey production represents over 11 percent of European production and nearly 2 percent of world production. Each year, we export 6,000 tons of high quality honey to 25 countries and especially to those that are developed from an economic point of view.

The current level of average production for a bee colony, 13-14 kg of honey, is great than the majority of the other producer countries. It is especially worth mentioning the contribution made by the people's farms which, accounting for approximately 940,000 bee colonies, achieve an average annual production of 14-15 kg per colony (with a record of 17.2 kg in 1977). For 1985, it is estimated that there will be 1.7-1.8 million bee colonies in this sector.

Considering the economic advantages of apiculture, there can be no reason to neglect it in the cooperatist sector of our agriculture. Not only has there not been measures taken to develop these activities, but in the last 10 years the number of bee colonies has decreased by nearly one-third, and the productivity per colony - approximately 6 kg per year - has remained nearly unchanged even though the cooperatist sector has large melliferous resources at its disposal (among other things, over 425,000 hectares of sunflowers). The reduction in the number of bees is tied to the shortcomings in the organization of production and in the training of the workforce, as well as to the limits on or total cessation of investments in the apicultural sector of agricultural cooperatives. A major decision in this area could lead to rebuilding their numbers and to the substantial growth of honey production.

Reserves for Increasing the Number of Bees and Production

Under our country's specific conditions, the greatest reserves for increasing the number of bees and production remain in the sector of the people's farms. There still are counties, especially in the mountainous regions, where the number of bees can be doubled or tripled. Climatic difference cannot completely justify the fact that, for example, in the people's farms in Alba, Harghita and Bistrita-Nasaud counties there are only four bee colonies per 100 hectares of agricultural land or seven, nine and six colonies, respectively, per 100 inhabitants in the rural areas while in Vilcea the corresponding numbers are 14 and 12.

The fact is that any family in the rural areas could raise two to three bee colonies with a minimum of material and human effort, while under these conditions the honey production would double. With regards to productivity, the large scale practicing of pastoral beekeeping, in order to better use the

melliferous base, could contribute to increasing honey production per hive by two to three times, along with reducing the costs of biostimulants used in bee feeding. Similarly, pastoral beekeeping offers the opportunity of using certain modern, intensive methods for raising and caring for bees, such as colonies having auxiliary hives and temporary families.

Table One

The Evolution of the Number of Bees and the Annual Production of Honey Per Colony

		1950	1970	1975	1979	1980
Unități agricole de stat (1)	mi colonii (3)	30.1	122.1	120.5	130.6	130.5
	kg	4.0	7.3	5.6	9.2	7.5
Cooperative agricole de producție (2)	mi colonii	2.5	112.6	71.6	56.8	46.6
	kg	6.0	6.6	5.1	6.7	6.1
Gospodăriile populației (4)	mi colonii	425.9	776.6	652.0	910.0	930.3
	kg	5.6	7.7	8.9	14.3	13.9
Total	mi colonii	458.5	1011.3	844.1	1097.4	1116.9
	kg	5.5	7.6	8.9	13.3	12.9

Key:

1. State agriculture units
2. Agricultural production cooperatives
3. Thousands of colonies
4. People's farms

Under conditions where production, contracting and acquisition prices were increased up to profitable levels (superior honey - 26 lei/kg, quality I - 22 lei and quality II - 17 lei), economic activities in apiculture can conclude each year with significant profits. The most graphic proof in this regard is the special interest shown by an ever larger number of people for raising bees, a group of people who find in this occupation (frequently practiced outside of their professional careers) an important means for increasing their personal incomes.

It is necessary to have, however, a substantial, concomitant increase in the contribution of the socialist sector of agriculture.

In the state agricultural enterprises, apiculture is organized in farms of 2,000 up to 5,000 colonies, and there is an increase in the number of apicultural farms that have the conditions for obtaining higher production levels (it would be worthwhile to have an analysis of the causes that caused the average annual production to fall from 11.4 kg in 1976 to 7.8 kg in 1980) and for reducing production costs. In this sector, it is necessary to improve the existing species by establishing certain specialized units that will produce

selected queen bees and swarms of high productivity bees, and to provide modern apicultural equipment and installations for the purpose of increasing labor productivity and hive efficiency.

Great opportunities for increasing the number of bee families can also be found in forestry units (where the number, last year, exceeded 65,000 colonies) for the purpose of better using and having a great efficiency in the forest flowers that are found in the hill and mountain regions.

The cooperatist sector benefits from especially favorable conditions for increasing the number of bee families. Apiculture can be a complementary branch for crop production, with the workforce being successively or concomitantly used in these activities depending upon seasonal needs.

The growth of honey production in the agricultural production cooperatives is influenced, however, by the making of certain production costs of a nature that are capable of making it profitable, and this cannot be obtained except by increasing efficiency and decreasing costs. This means the more productive use of certain bee families, the mechanization of certain work (the loading and unloading of hives in pastoral hivekeeping, the extraction of honey and so forth) and the supply of multilevel hives that are highly efficient and of modern apicultural tractors that can haul 50-70 hives each.

Specific and Efficient Measures

The problems of developing apicultural in our country cannot, certainly, be resolved all at once and without material and financial efforts. Precisely for these reasons, the first ones called upon to contribute to their solution are the agricultural and forestry units which, with better guidance and support from the central organs with tasks in this area, can provide the beekeeper with an improved and tested organizational framework of technologies for the purpose of obtaining certain higher levels of productivity. At the same time, it is necessary to have a better cooperation between the units in the socialist sector and the Bee Raisers Association for the purpose of having a better use of the natural conditions and existing melliferous flowers in our country, as well as for providing the biological stock and equipment needed by the people's farms. There is need to establish certain direct relations between the association and the agricultural and forestry units for the purpose of expanding pollination actions for entomophil plants - a cooperation that will allow Romanian agriculture to fully benefit from the positive effects of pollination in increasing harvests and that will, at the same time, be advantageous to apiculture.

8724

CSO: 2700

CHEMICAL EXPORT RESTRUCTURING BASED ON MAXIMIZING RETURNS

Bucharest REVISTA ECONOMICA in Romanian No 19 14 May 82 pp 13-14, 27

[Article by Olga Mihaescu and Ioan Popa: "The Restructuring of Export Offerings in the Chemical Industry"]

[Text] A decisive direction for action in increasing the efficiency of foreign trade in the products of the chemical industry and in promoting and increasing its efficiency is the full implementation of the measures outlined in party and state documents calling for the restructuring of export offerings and for the continuing improvement of the production of this branch in accordance with the requirements of contemporary technical progress.

In the Report of the United Nations Industrial Development Organization (UNIDO), "World Industry in 1980," it is estimated that in the 1970's the chemical industry entered the world scene in the second phase of its development, one of maturity, characterized by a more accentuated orientation towards finished products (laquers, paints, detergents, cosmetics, medicines and so forth) compared to basic and intermediary products. As a result, specialization in products having a high degree of processing, increases in the per-ton value for increasing the efficiency of sales and ever more complete adaptations to consumer requirements are current conditions for gaining and maintaining sales markets.

At the same time, according to the same study, in the 1980's there will be a movement into the third stage, characterized by the growing costs of basic inputs, restrictions of a technological and environmental nature, the increases in the framework of commercial changes involving chemical products in the number of sales of basic products as a result of saturation in many markets and the strong entry of certain more advanced developing nations into the world markets. These predictions begin to show that, for a series of sub-branches of the chemical industry, such as those products in large tonnages, the conditions of the foreign market no longer provide an appropriate profitability for exports and this does not justify maintaining certain high levels of exports. At the same time as the reorientation of these sectors towards their most competitive products, it is necessary to have a redimensioning of production and an optimization of the relationship between foreign sales and sales on the domestic market.

The improvement and restriction of the list of export products, the concentration upon those products having a high level of use and higher average per ton prices, the specialization of production for export in accordance with the structural conditions and circumstantial evolution of the foreign markets and the specific requirements of the foreign users are current requirements for promoting and increasing the performance of Romanian exports of chemical products.

Increasing the Per-Ton Value of Products

The characteristics of the development of the Romanian chemical industry over the recent five year plans - high rates, the growth and diversification of the list of products, the structural changes and the trend of accentuating qualitative facets - have been appropriately reflected in the sphere of foreign trade activities through the dynamics and structure of the exports of this industry. As shown in Table No 1, the export of the group including chemical products, fertilizers and rubber recorded rates of growth among the highest noted, outstripping the growth of total exports, and, in the recent decade, the rate of the chemical industry itself. As a result, the percentage of the group of chemical products (excluding petroleum products) within the total amount of exports has currently reached over 10 percent (which approximately corresponds to the percentage of this group in world exports - the world average). At the same time, an ever greater portion of the production of our chemical industry is destined for the world market, with the chemical industry having one of the highest levels of involvement in exports.

A priority direction in improving the exports of this branch has been, especially in the recent decade, an orientation towards those products and varieties that use natural and labor resources at a superior level and towards those goods characterized by the highest possible average per-ton price and the growth of the degree of processing of those goods slated for the foreign market. Actually, an important trait of the chemical industry is the vast range of varieties that are obtained starting with a certain raw material, as well as the very significant differences with regards to the unit value and foreign price of these products in relationship to the degree of processing. Thus, for example, the per-ton values of crude oil that has been transformed into phenol increase by 10 times over, into acrylonitril by 18 times over, into butyl rubber by 34 times over and into polyester resins by 40-120 times over (1980 prices). And, along these lines progress has been made, with the average price obtained on the foreign market being - in relation to calcium hydrate taken as a base - being more than five times greater for PVC and vinylidin, seven times greater for high density polyethylene, 8.5 times greater for plastic products, 10 times greater for butyl rubber and 14 times greater for poly-isoprenic rubber.

According to these criteria, priority has been given in the orientation of exports to those products characterized by a higher average per-ton price and by an increase in the level of exports of rubber, PVC, tires, chemical fibers and threads, as well as - with some oscillations - plastics, dyes,

laquers and paints, and the reduction of the direct export of certain basic chemical products. These basic products were directed towards more advanced processing within the framework of the national chemical industry (for example: the reduction in the level of exports of carbon black, methanol, phenol - see Table No 2). This orientation, as well as the growth of our industry's ability to provide the complex requirements for chemical products in our national economy and for foreign customers, has been expressed in the increase in the efficiency of the export of different products and groups of products and in the achievement in recent years of a strong surplus in the trade balance in the field of chemical products (see Table No 1).

Table No 1

Indicators of Chemical Product Exports*

	1950	1960	1965	1970	1975	1980
Voluntul exportului de produse chimice (%) (1)	100	445	20 ori 106	(2) 37 ori 124	135 ori 8 ori	258 ori 13 ori
Coefficientul de de- vansare a produc- ției** (3)	—	—	0,68	0,95	0,68	1,20
Coefficientul de de- vansare a exportu- lui total*** (4)	—	—	1,31	3,85	1,22	6,48
Ponderea produselor chimice în export- ul total (%) (5)	—	1,7	2,2	6,4	7,0	10,8
Balanța comercială la produse chi- mice (mil. lei va- luta) (6)	—	—	—	—	—	—

* Group of chemical products, fertilizers and rubber (see statistics of S.R. Romania)

**Indices of the export of chemical products/indices of chemical industry production

***Indices of the export of chemical products/indices of total exports

Source: calculated according to the "Statistical Yearbook of the Socialist Republic of Romania, 1981"

Key:

1. Volume of exports of chemical products
2. Times over
3. The coefficient of exceeding production
4. The coefficient of exceeding total exports
5. The percentage of chemical products in the total exports
6. The trade balance for chemical products (millions of hard currency lei)

Nonetheless, in analyzing the structure of Romanian exports during the last five year plan we find that there are serious reserves for improvements and for increasing the export of higher processed products. Thus, basic products and high-tonnage goods (chloro-soda products and chemical fertilizers) still hold down a significant percentage in exports, exceeding by several times over the level of these branches' participation in the structure of exports of chemical products in developed countries. As a result, a large portion of Romanian exports is located in the class of relatively cheap products (under \$1,000 per ton), products that do not ensure the appropriate use of resources, and under conditions of the exorbitant growth in the price of energy and primary products in general they have become very costly in terms of national effort.

Table No 2

The Evolution of the Level of Exports for Chemical Products*

	1960	1965	1970	1973	1980
1. Soda caustică (1)	44,1	46,6	28,5	39,5	34,4
2. Soda calcinată (2)	52,9	47,8	55,5	50,5	54,7
3. Negru de fum (3)	67,7	47,1	48,0	35,0	28,7
4. Metanol (4)	—	37,9	40,9	3,1	5,5
5. Fenol (5)	43,8	61,9	52,3	47,3	3,6
6. Mase plastice și rășini sintetice (6)	2,4	22,6	21,3	17,0	25,6
7. PVC și vinilidîn (7)	—	—	—	14,0	38,1
8. Cauciuc sintetic (8)	—	36,6	40,2	39,4	38,2
— poliizoprenic (9)	—	—	—	—	61,9
9. Anvelope (auto, tractor, avion) (10)	—	29,6	20,8	22,6	21,0
10. Fibre și fire sintetice (11)	—	1,0	17,6	24,7	19,2
11. Lacuri și vopsele (12)	2,5	1,8	20,3	20,2	16,7
12. Coloranți și pigmenți organici (13)	3,5	30,3	24,7	45,7	21,8

* Percentage of export in the production of the group of products

Key:

- | | |
|----------------------------------|---|
| 1. Sodium hydrate | 9. Poly-isoprenic ubber |
| 2. Calcium hydrate | 10. Tires (automobile, tractor, airplane) |
| 3. Carbon black | 11. Synthetic fibers and threads |
| 4. Methanol | 12. Laquers and paints |
| 5. Phenol | 13. Dyes and organic pigments |
| 6. Plastics and synthetic resins | |
| 7. PVC and vinylidîn | |
| 8. Synthetic rubber | |

As is shown in the speech by comrade Nicolae Ceausescu at the Second Congress of the Workers' Councils, this is why in the development of the chemical industry during the current five year plan stress will be placed on increasing the degree of processing raw materials and materials and on producing new, superior products and adopting new technologies that will lead to the ever better use of raw materials, the reduction of specific consumption levels and the production of higher quality products.

The new requirements that stand before the production and export of chemical products - those imposed by the current level of development of the technical-material base of this sector and by the requirement to move Romania to the status of a country having an average level of development - are also expressions of the changes that have taken place in the world economic arena during the current period and the implications of the structural crisis of the world economy, especially the energy crisis. The difficulties in getting access to a series of primary products, such as hydrocarbons, the sharpening of international conflicts, the proliferation of certain restrictive trade practices and the growth of the degree of uncertainty and risk in foreign transactions require, in all the countries of the world, taking certain measures for structural adaptation, including in the chemical industry in accordance with the new technological and economic realities.

An important direction for action in the 1981-1985 five year plan is represented by the development of precision synthesis and low-tonnage production on the basis of using technological facilities and national scientific research, the more powerful promotion of the export of medicines and dyes, including by way of the production of modern varieties, and the extension of the export of original cosmetic products under conditions of quality and packaging that correspond to the requirements of the foreign market.

In recent years, these products accounted for less than 10 percent in our exports, while in France their percentage is over 15 percent, in England 18-19 percent, in West Germany over 13 percent and in Italy over 11 percent. This orientation towards new products of high economic value and towards top-level achievements in this field of production, the continuing renewal of the list of products and its constant placement at the level of world market requirements must also direct the development of exports for other groups of products. Thus, with regards to plastics it is necessary to increase the production and export of certain valued varieties of processed products, beginning with polystyrene, polypropylene and polyethylene (technopolymers in general) and to start production of polyacrylic and polyurethane plastic materials and polycarbonate products. For this group of products there is a significant reserve for promoting exports, with their total percentage in our country being approximately two times lower than in the export of France and England and three times lower than in the exports of West Germany, Italy and Belgium.

In the field of chlorosoda products, where our country has long experience and a significant production capacity, production must be directed towards the production of sodium hydrate in flakes and pellets, sodium silicates, pickling and phosphatizing agents for machine building, and so forth, in accordance with the current trends in demand. At the same time, the achievement of certain cooperative actions in production, the construction of chlorosoda products factories in the developing nations, including tripartite cooperation, and the achievement of certain complex joint production and

sales operations for soda, soaps and detergents are proving to be ever more superior forms - in relationship to the traditional forms of exports - for using our potential in this area, which satisfy the current energy and technological restrictions.

Table No 3

The Influence of Modernizing Production Technologies Upon Energy Consumption (in percent as compared to classical technology)

(2) Tehnologii folosite in fabricatia de:		(1) imbunatatirea consumurilor specifice de:		
		(3) combustibil conventional	(4) energie electrica	(5) abur
(7) Amoniac (6)	- generatia I (1960-1965)	100		
	- generatia II (1967-1968)	68		
	- generatia III (1969-1972)	64		
	- generatia IV (1974-1980)	64		
2 Uree (8)	- procedeu conventional (9)		100	100
	- procedeu stripping (10)		18	86
3 Metanol (11)	- instalatie 1 (10000 t/an) (12)	100	100	
	- instalatie 2 (30000 t/an)	111	82	
	- instalatie 3 (50000 t/an)	72	79	
	- instalatie 4 (210000 t/an)	60	3	
4 Butadiena (13)	- procedeu clasic (14)	100	100	100
	- procedeu oxidehidrogenare (15)	20	79	77
5 Etilena (16)	- oxichlorurarea etilenei in pat fix (17)		100	100
	- oxichlorurarea etilenei in pat fluidizat (18)		86	93
6 Propilena (19)	- procedeu clasic		100	
	- procedeu imbunatatit (20)		26	
7 Etilbenzen (21)	- C.P. Pitesti (40000 t/an) (22)		100	100
	- C.P. Teleajen (60000 t/an)		77	72
	- C.P. Navodari (120000 t/an)		57	61
8 Stiren (23)	- C.P. Pitesti (30000 t/an)		100	100
	- C.P. Teleajen (50000 t/an)		87	77

Data from: Mihail Florescu: "Development Strategy in Chemistry," Politica Publishing House, Bucharest, 1981; REVISTA DE CHIMIE, No 9/1981.

Key:

- | | |
|---|---|
| 1. Improvements in specific consumption of: | 14. Classical procedure |
| 2. Technologies used in the production of: | 15. Oxide-hydrogenation procedure |
| 3. Conventional fuel | 16. Ethylene |
| 4. Electrical energy | 17. Oxychlororation of ethylene in a fix medium |
| 5. Steam | 18. Oxychlororation of ethylene in a fluid medium |
| 6. Ammonia | 19. Propylene |
| 7. Generation I | 20. Improved procedure |
| 8. Urea | 21. Ethylbenzene |
| 9. Conventional procedure | 22. Pitesti Petrochemical Combine (tons/year) |
| 10. Stripping procedure | 23. Styrene |
| 11. Methanol | |
| 12. Installation 1 (tons/year) | |
| 13. Butadiene | |

A Solution - Integration of the Stages of Higher Processing

An important requirement in the growth of the efficiency of exports of chemical products is represented by the specialization of production for export in an integrated concept, from the raw material to the final product, pursuing the bringing together of as many processing phases as possible. Actually, under the conditions of radically modifying trade relations on the world market between different products and groups of products, as a result of the energy and raw materials crises, the export of chemical products during the first stages of processing does not always ensure an appropriate recovery of primary inputs and a high level of efficiency. The growth of the profitability of production and exports requires, to an ever greater degree, the achievement of savings on "the vertical axis," the integration of production and the recovery of the costs of primary factors through the better use of the final product. This is also the trend that currently can be seen on the world scene. As shown in the UNCTAD ST/MD/23 study, in the current structure of the chemical industry there is a new wave of acquisitions and mergers, with a large portion of international trade being carried out between enterprises belonging to certain giant groups put together along vertical axes.

In this new context, we must also place the strategy of reducing costs along "the horizontal axis" by achieving economies of scale as a result of increasing series (volume) production specific to the development of certain basic and intermediary production during the 1960's and 1970's (see Table No 3).

We have in mind, for example, the relative reduction of the export of carbon black and the increase in the export of synthetic fibers and threads, which, as we have pointed out, leads to the multiplication of the value of the products. Similarly, the increase in the degree of processing for petroleum products by continuing to improve the production and export of rubber and the stressing of polyisoprenic rubber, butadiene-styrenic rubber, the production of latexes and the export of tires and rubber items in accordance with the current foreign user demand (radial tires, "tubeless" tires, giant tires and so forth) will also help.

As a large exporter of chemical fertilizers, especially nitrogen-based fertilizers, with their percentage in exports in recent years being 2.5 times greater than in Belgium, over 5 times greater than in Italy and nearly 9 times greater than in the FRG - for which we obtain a favorable return (less than the unified trade return), we can achieve an increase in the average price per ton of export by increasing the percentage of exports of complex fertilizers, by quickly adapting to changes in demand and by improving the quality of the products offered through exports.

At the same time, the achievement of certain complex foreign trade actions and production cooperation actions can lead to a better use of our facilities in this field and to the optimum dimensioning of exports.

The Conservation of Energy as a Raw Material and Fuel

An important direction in the restructuring of the chemical industry's export offerings, placed in agreement with the requirements for advanced processing, is represented by the orientation of production towards those technological procedures that ensure a lower level of energy consumption, as well as the conservation of raw materials involved in the production process. This desire must be kept in mind even more so in the chemical industry since it is among the branches with the highest levels of specific electrical energy consumption per worker.

The use of certain advanced technologies and the modernization and permanent improvement of the installations that are used, up to the level of world technology, are precisely the ways to produce certain chemical products of a high quality and competitive level on the world market under conditions of certain reduced levels of raw materials and energy consumption (see Table No 3).

8724

CSO: 2700

ROMANIA

PETROLEUM MINISTER DISCUSSES DELAYS IN OIL PRODUCTION

Bucharest SCINTEIA in Romanian 12 Jun 82 pp 1.3

[Interview with Gheorghe Vlad, minister of petroleum, by Dan Constantin]

[Text] As part of the efforts designed to ensure the attainment of the priority economic goal -- the country's independence in terms of energy during this decade -- provision of greater output of crude and gas is a paramount task. Recently, our newspaper has portrayed the concerns and results of the activity of many collectives of oil workers, who display spirit of responsibility and dedication in obtaining the highest possible crude oil outputs. Today, in our interview with Gheorghe Vlad, minister of petroleum, we describe the manner in which workers and experts in the petroleum industry perform to implement their assignments for this year, in line with the instructions given by the party secretary general at the recent enlarged plenary session of the CC of the RCP. Of course, the results obtained in 5 months of this year triggered the discussion.

[Answer] The work of oilmen in the first part of this year materialized in a number of positive results, including the overfulfillment of the plan for gas production by almost 748 million cu m and 655 tons for gasoline, implementation of plan provisions for investment projects, export and economic cooperation with other countries. But these results cannot satisfy us as long as this period of the year did not see the attainment of the level anticipated for crude oil extraction. Even though the crude output showed progress -- versus the same period of 1981 extra 45,000 tons were extracted -- the output did not reach the level expected under the plan provisions. It is true that during these months the energy balance was compensated by supplemental deliveries of natural gas, but the petroleum output backlogs, for which we are responsible, generated difficulties in ensuring fuel and raw materials to other economic branches.

According to the pledge taken before the party leadership, in the presence of Nicolae Ceausescu, who closely followed the activity in this vital economic sector, we are firmly resolved to bring crude oil output up to the level of the tasks outlined. Moreover, during May, eight of the 19 oilfields under the ministry obtained average daily outputs at the planned level and two petroleum trusts reached the planned level for the daily crude output.

[Question] From your answer it follows that many units have so far gained valuable experience in organization of production and work, which has ensured the fulfillment and overfulfillment of plan assignments. What does this experience involve and what is being done to make it operate on an overall scale in all units?

[Answer] Under this five-year plan, which will mark a continuous rise in the level of crude oil extraction, in all drilling and mining units, the collectives are mobilizing their efforts and all their creative energy to attain the objectives set by the party leadership. In the context of oilworkers' emulation, unfolding under the keynote "Most Oil for Our Country," a number of valuable initiatives and methods of organization have emerged, whose impact has been reflected in the production increases obtained. In the first place I would like to point out the experience gained during recent months in the optimal utilization of the amount of oil wells and the mobilization potential of oilmen at the Videle, Mosoaia and Tirgoviste oilfields. At the Tirgoviste Oilfield, the return to service of old damaged or abandoned wells has resulted in an increase in the mining level above the plan targets, and at the Videle Oilfield, modern methods for monitoring wells' operation in oilfields has ensured maximum expeditiousness in the endeavors of the overhaul teams.

The modern mining procedures, which mainly focus on maximizing the utilization of the deposits, have yielded very good results in the structures of the curvature Sub-Carpathian area. For instance, the final recovery factor has reached 48% in the Manesti-Draganesti area and the Tirgoviste Oilfield, on this basis, obtains more than 40% of the amount of crude oil extracted. Positive results also were obtained in drilling and utilization of deep wells.

Furthermore, a basic concern of collectives in petroleum units involves wise management of material resources, rigid administration of fuel and energy. We constantly keep in mind that the petroleum and gas industry is not only a producer of fuel but also a major consumer of energy. For each 1,000 tons of crude oil extracted an average amount of 35 tcc is used, and for 1,000 drilled meters 110-130 MWh electric energy are used. As instructed by the party leadership, a sustained drive has developed in the entire branch to significantly reduce these consumption rates by promoting new mining and drilling procedures, intensive utilization of facilities, elimination of idling, proper maintenance and utilization of installations, use of reusable energy resources.

What do I want to point out by these examples? Practically, at every oilfield, valuable experiences and initiatives have developed, and some of them offer prospects for use on an overall scale. The exchanges of experience which are being organized chiefly at the level of trusts and oilfields, primarily focus on presenting the best technical ideas and methods of organization of production and work. Also, the experts of our research and design institute, those from the ministry apparatus, whose activity has shifted the emphasis to production units, work for the advancement of the experiences that have proved their effectiveness.

[Question] What is being done at the level of ministries, trusts, and, especially, at oilfields, to do away with backlogs in crude production?

[Answer] From the onset I would like to specify that responsibility for the non-fulfillment of the plan for crude extraction in the first part of the year primarily

rests with us, workers in the petroleum industry. In order to eliminate the delays in the production of crude oil, firm measures are taken to do away with the causes that generated them. I must point out that, even though I specified, as early as last year, at the level of the ministry, trusts and oilfields, broad programs for upgrading production activity, some measures were not implemented and there were unjustified delays in the completion of other measures. For example, we failed to strengthen, according to our potential, the activity in terms of overhaul, production tests and capital repairs for oil wells. Out of the 12,000 oil wells that make up the production capacity of our oilfields, by the end of May, 500 wells were idled for capital repairs and overhaul. If only half of the number of wells made idle had been returned to service, the oilfields would have daily provided a surplus of about 200 tons of crude. We plan to significantly reduce the number of idle wells by the end of June, so that one of the chief causes of delays in extraction may be eliminated.

We are paying special attention to improving the activity of geological research and to the activity of drilling, surveying and mining, especially deep drilling, and to upgrading the methods for increasing the oil inflow in wells. The councils of working people in trusts and oilfields, teams of experts from the ministry and research and design units carefully examined the shortcomings found, the problems that underlay the righting of the activity in each unit and production section. The solutions devised aim at attaining the planned extraction levels at all the 19 oilfields in the month of June. We must point out that the average daily crude output went up in May, versus April, by 330 tons for all the units of the ministry. Moreover, measures were taken to expand geological surveying to include new structures with prospects of containing hydrocarbons and open new areas of great importance in boosting oil and gas outputs: Virteju, Stoenita (Gorj County), Mihai Bravu, Nadlac, Seitin (Arad), Contesti (Bacau), Ghelinta (Covasna) -- areas which have gone into production, some with significant daily outputs.

At Umbraresti and Independenta (Galati), Mamu and Mitrofani (Vilcea) we continue our drilling in both research and mining. To these technical measures are added firm steps which are taken at oilfields and production sections to strengthen order and discipline, enhance responsibility in work at all hierarchical levels, because on observing discipline in terms of technology and work ultimately hinges the upgrading of production activity.

[Question] When do you think will the delays be eliminated?

[Answer] I repeat: The oilmen chiefly are accountable for nonimplementation of the plan for crude oil production. Without underrating our shortcomings, I deem it necessary to point out that our units were faced with some difficulties caused by nonimplementation of contractual obligations by a number of enterprises in the metallurgical, machine building and chemical industries. During 5 months we did not receive from the contracted for amount 2,200 t pipes from high-grade steels, 617 t mining pipes out of alloy steels, 1,000 threaded pipes, 815 t drill pipes, 69 thermal motors for drilling installations and 35 pumping units, a significant amount of chemicals destined for mining processes.

To reduce the deficiencies caused by some suppliers, in all trusts and petroleum enterprises permanent drives are under way to upgrade the handling of materials

and equipment, to increase their life, to minimize relative consumption rates. During the last months, following an inventory of materials and facilities provided to units, a number of pumping units, drilling rods, mining pipes and stems, and various other materials valued at 4.6 million lei, were returned to the production circuit.

I am again pointing out that our activity cannot develop at the level set for us by the party leadership without a greater assistance from the suppliers of equipment destined for the units in the petroleum and gas mining industry. The rate of eliminating delays also considerably depends on the suppliers' ensuring the materials and installations requested. It must be well understood -- and the party executives have clearly stated it -- that without a greater increase in oil production, great difficulties are created in the economic mechanism, in the country's energy balance.

The shortcomings which I listed above can be eliminated and the backlogs can be done away with in the next months. To do this it is necessary, it is imperative that all the parties involved work for rapidly resolving the problems that underlie the rise in oil production and the attainment of the gas, gasoline and ethane production.

11710
CSO: 2700

GREATER USE OF ANIMAL POWER IN AGRICULTURE CONSIDERED

Bucharest REVISTA ECONOMICA in Romanian 28 May, 4 Jun 82

[Article by Dr O. Parpala: "Animal Power in the Energy System of Romanian Agriculture"]

[28 May 82, pp 10-11, 13]

[Text] It is at the beginnings of the first industrial revolution "the sheep swallowed up man," under the conditions of the contemporary scientific-technical revolution, which includes agriculture, it can be said that "the machine has swallowed up the animal." The existence of certain sources of abundant and cheap energy sources favored the extension of motorization in agriculture, and everywhere the motor overtook animal power or beasts of burden, like a train passing a wheelbarrow. One after another, the developed capitalist and socialist countries, and after them numerous developing nations, replaced animal power with motorized tractors and transports. The most advanced agriculture in the contemporary world was caught up in a true frenzy with the motor while animal power was reserved, in the majority of cases, for sport and pleasure.

But, from this beautiful dream, world agriculture was thrown into the nightmare of the energy crisis that was especially strongly felt in agriculture where the main motive force - the tractor - was based exclusively upon the use of fossil fuels. As a result, the last decade was characterized by the initiation and intensification of research into the discovery and use of certain new sources of renewable energy, including the reconsideration of animal power, especially for those countries where the process of replacing animal power has still not reached irreversible limits. Certainly, this is not an easily solved problem given the fact that for a long period of time economic practice and research has not considered this primary energy source, with whose help man carried out a true revolution in the development of agricultural crop tools and methods.¹

The status of animal power throughout the world and in Romania, the criticisms made, the reconsideration of the advantages of animal power as a renewable energy source in agriculture and the main directions for the development of animal power and its more efficient use - these are only some of the problems that I will attempt to analyze in this article.

The "Motor-Animal" Relationship in the Complex Group of Agricultural Activities

The main argument used against animal power (especially against the horse) was the incompatibility of mechanical energy and animal power, a thesis proven incorrect however both by world practice and by our own experience (to which I will refer later on the basis of the research results that I initiated and headed up within the student scientific circle called "Agrarian Economics and Policy in the Socialist Republic of Romania").

First of all, on the international scene tractor motor pools in the recent decade (1969/71-1980) have increased by 4.8 million units (from 15.5 million to 20.3 million, or by 31 percent). During the same period, the numbers of horses were reduced by only 2.7 percent (the percentage for mules and donkeys remaining constant), a reduction due solely to the underappreciation of animal power in some countries. It is clear, therefore, that the extension of the motorization of agriculture does not exclude, but implies the existence of animal power as a complementary energy source that is absolutely necessary under certain working conditions (which we will detail later on). This source becomes even more necessary under the conditions of the fossil energy crisis, the only one capable of powering on a large scale the deployable, mobile mechanical equipment that can cover the large land areas.

And, the research that has been carried on throughout the world has established a close correlation between the amount of energy available per hectare and the output of the agricultural crops, especially when the energy imports are increased to .4 kw per hectare. Under these conditions, animal power can provide complementary power to the mechanical power in order to increase the per-hectare output.

Second, the clearest illustration of the complementary nature of animal power and mechanical power is the situation in agriculture in some of the economically advanced countries (the United States, for example), which clearly show that the motor does not replace the horse, but subordinates it within the energy system of agriculture for the proper carrying out of all agricultural work with a high degree of economy. And, in Romania, where there is one tractor per 107 hectares of agricultural land or 75 hectares of arable land and for the same tractor there are eight rural inhabitants or four persons working in agriculture, for each horse there are 19 hectares and 10 persons. Just through this simple comparison one can see the amount of reserves - which can be raised to the level of need - we have available in order to increase the number of animals for tractive power and the number of horses.

Animal Power and Small Farms

Third, under certain social-economic, technical and pedoclimatic conditions in Romania's agriculture the use of animal power proves more efficient (in a social and economic sense) than mechanical means, a fact which requires the proportional combination of mechanical power and animal power.

I am speaking about, first of all, the completely special conditions on the private farms in the mountainous and even hilly regions: small arable land areas, those scattered on lands having a relatively steep slope, those having a thin layer of soil, and so forth. Under such conditions, currently the problem of extending mechanization in these regions, by building a specific tractor having an adequate system of machinery, itself presents a question mark. Mechanization is one of the technical attributes of high production. And, precisely the lack of certain adequate conditions that will permit showing the superiority of high production has brought about maintaining small farms in these regions. The establishment of certain agricultural mechanization stations to serve the private farms in the mountainous regions is, we think, inopportune under the current conditions of the energy crisis. It seems more appropriate to us to increase the number of work animals (and beasts of burden) and the production, by our industry, of those tools necessary for animal power, modernizing the agricultural production processes in these regions on the basis of this energy source.

According to recent published data (1973), the private farms have over one-fourth of the horses in the country although they possess only 9.5 percent of the agricultural land or 4.8 percent of the arable land. We believe, however, that given the specific structure of production in these poorer regions in those cereals that produce concentrated fodder, as well as the specific conditions for carrying out agricultural work, the main form of animal power must be represented by the ox. At the same time, we should not neglect the use of horses for light transports for different transportation activities (including forestry work), as well as beasts of burden, whose need will become even more clear as we intensify the production from mountain pastures by moving to the large scale organization of summer camps for grazing animals (cattle and sheep) in the plains regions.

Special problems are also raised by the use of animal power on the private farms of cooperative members. These farms account for 14 percent of the number of horses and the largest portion of donkeys. The carrying out of agricultural work on the small land areas of the personal plots in the village, and especially production and farm transport activities, make the horse and donkey a precious auxiliary in the better use of all production resources on the personal farms.

The Area of Profitability of Horse-Drawn Transports

Large socialist mechanized agricultural production - by its very nature of using all production resources on economical and rational bases - does not replace, but subordinates animal power. Very graphic from this point of view are the results of the research to which I referred earlier that are localized in a number of agricultural production cooperatives in Buzau County, both on the plains and in the hilly regions in this county.

By fields of activity, given the current structure of production in the agricultural cooperatives that were researched approximately 70 percent of the consumption of days per pair of animals (d/pa) takes place in the crop

production sector, especially for transport activities: for fertilizers (approximately one-fifth), for agricultural products (approximately one-third), for fodder for animals (one-tenth to one-fifth) and for the transportation of cooperative workers to the fields (up to one-tenth), as well as for the transportation of seeds to the fields, for the transportation in connection with construction, for irrigation projects, for the transportation of water for the tobacco crop (in the plains) or for the watering of the grape crop (in hilly areas), and so forth. In accordance with the structure of the crops, nearly two-thirds of the total consumption of d/pa are accounted for by the corn crop (nearly two-fifths) and wheat, followed by vegetables, sugar beets, sunflowers, clover and tobacco. In cases where horses are also used in carrying out certain agricultural projects, over four-fifths of the consumption of d/pa stems from mowing and cultivating (nearly two-thirds), followed by pest control and raking.

The excellent use of horse-drawn transports for production and farm transportation is explained by the higher economic efficiency (lower costs) of this power source in comparison to mechanical power (especially trucks). Even on the international scene, it is estimated that animal-drawn vehicles complement mechanized transport equipment, yielding a higher efficiency in the case of transporting smaller loads (in weight, but which can be large in volume - like hay, stalks, fodder and so forth) over short distances. The higher efficiency of animal-drawn transport vehicles in comparison to trucks or tractors is even clear in the case where the loading and unloading time is great in relation to the time needed to carry out the transport. Keeping in mind the investments necessary in order to be profitable, a truck must each day travel a distance of at least 150 km. This shows how uneconomical it is to use trucks or tractors to transport cornstalks, hay and haycocks out of the fields, as well as corncobs temporarily stored in fields and whose loading and unloading must be done manually.

From the data that we have, the activities of certain agricultural production cooperatives show that the transportation of unbaled field products is cheaper when it is done using animal traction (horses) up to a distance of seven kilometers compared to a tractor with a four ton vehicle, up to a distance of 6.4 km compared to a tractor with a five ton vehicle and up to five km compared to a tractor with two towed vehicles. The transportation of a ton of fibrous product over one kilometer costs 97 percent more when a tractor with a four ton trailer is used and 64.4 percent more when a tractor with a five ton trailer is used, in comparison to a vehicle pulled by two horses. The cost of transporting stable wastes (per ton/km) is lower when it is done by horses up to a distance of 2.45 km. In the case of transporting root-type crops (sugar beets, potatoes), the cost (per ton/km) is lower for animal power up to a distance of 4.85 km (but the condition of the roads during late fall and the rains allows this limit to attain much greater limits). Animal-powered transportation of wheat, barley, oats and so forth is cheaper compared to tractors up to a distance of 2.95 km and only up to a distance to 2.65 km when compared to trucks. Concerning the transport of corncobs, the use of horse-powered transports costs less than the use of tractors (also per ton/per) up to a distance of three km.

Certainly, these are orientational limits determined under certain conditions (prior to the updating of prices for fuels, diesel oil and gasoline), with these limits being variable depending upon changes in the basic parameters upon which they were based. One thing, however, is certain: in the area of transportation between farms (not to mention transportation within the farm) the use of animal power is more profitable than mechanical power (within certain limits). This conclusion is also valid for the transportation of management and assistance personnel, where a return to the classical horse and carriage can not only lead to savings in usage, but also increases their ability to understand the realities in the field, contributing to a better understanding of the work.

Criticisms That Do Not Take Reality Into Account

As a result, instead of ending its historical role in the development of agriculture - and against the unjustified desire of some to speed the departure of animal power from the picture of the contemporary village - animal power is proving just as useful for the progress of agriculture as mechanical power, even though it holds - it is true - a complementary position, but an irreplaceable position.²

On the other hand, there are those who, without an appropriate substantiation and claiming that animals "compete with man" in the use of the land, subjectively lose sight of an essential element: neither pigs nor fowl are part of the category of animals used in transportation. The largest portion of the food for draught animals is based on crop products that are not used by man; these animals consume fodder which, furthermore, would be lost to the economy. As a result, raising draught animals not only would permit the better use of pastures and natural hays, but, by way of the natural fertilizers that are produced, would contribute to increasing the efficiency of these fields. It is true, however, that they compete with production animals, limiting the fodder resources for them. In reality, it is not the presence, but the insufficiency of draught animals that limits the country's fodder resources. Let us keep in mind just the quantitative and qualitative losses of fodder due to the delays in the harvests, transportation and storage precisely because of a lack of draught animals, those most appropriate for such transport work. Therefore, there is room under the sun for both production animals and draught animals, with their interaction favoring the growth of both crop and animal production.³

Another "criticism" deals with the seasonal nature of using draught animals and the fact that they also eat on those days when they are not taking part in agricultural activities. This does not mean that we cannot organize the use of animal power during the "dead" periods in agriculture. The transport of stable wastes to the field during the winter period (a lost tradition precisely because of the shortage of draught animals which can go where the tractor cannot), the transport of large volume fodder from the storage areas to the stables, the movement of supplies of chemical fertilizers, seeds and so forth - so that we no longer can speak about transportation needs for the

non-agricultural production activities in the villages - are all directions for the more uniform use of draught animals during the course of the year so that the period of use can increase to 200 and even 300 days per year (exceeding that of a tractor or even a truck).

Let us not forget that, up to now at least, a motor cannot give birth to another motor that will replace it when it is used up. And, animal power presents great advantages since it is renewable. The mare, cow, buffalo cow, mule and so forth leave behind during the period they serve as draught animals a number of offspring which become, in turn, draught animals. This is also the special significance of the animal power resource.

"Secondary" Economic Effects

Under the current conditions of the international market, the raising of horses can also become a hard currency source worthy of being considered. The hard currency contribution of a trotter sold from stud (up to 2 years of age) is \$1,000-\$2,500. For a horse "trained" for 1 to 2 years (when the costs for care increase by approximately 10 percent compared to those up to 2 years old), the hard currency contribution is 15-20 times greater.⁴

More than that. Draught animals represent an entire series of other uses of great economic significance. Manure and urine are used as the most complete fertilizer (a third of the farmers in the world use them to fertilize the soil). Upon death, these animals provide meat, hides, hooves, bones, blood and so forth that find multiple uses in industry and even in foodstuffs. Horse meat, for example, is characterized by the highest content of protein and glucide substances, by a high content of mineral substances and by the lowest fat content. For that reason, it is regrettable that, while we organize the fattening of horses for export, domestic consumption underestimates horsemeat, whose use in production made the traditional Sibiu salame famous. With regards to horse manure, rightly called "bio-fuel," it is not equalled in calorie content, not even by cow manure. Normally, the entire nursery and early vegetable production, as well as the mushroom crop, are based upon the use of this "living fuel." Its replacement by the use of technical heating or by using the sun to heat layers of polyethylene has not only proven costly, but does not provide the plant with cheap nutritional elements that are offered by horse manure. Even the hair (from the mane) finds the most diverse and useful uses, including as strainers in the milling industry and as bowstrings for string instruments, while the bones serve in the refining of sugar and, as flour, in the feeding of animals.

Recent history leads us to another finding of a social-economic nature: the forced reduction of the number of draught animals in agriculture has contributed to the migration of the workforce from the village to the city. The old peasant, in the prime of his life, with the professional qualifications that he has and with the innate attachment to draught animals, no longer finds his place in a motorized agriculture which requires new skills and a new professional direction.

Not by chance, today the lack of draught animals is concomitantly felt with the lack of a workforce for the development of zootechny on the basis of the new orientations resulting from the rational combination of the modern with the traditional.

Draught animals, and first of all the horse, were one of the first of man's colleagues with which he started down the long and difficult road of creating modern civilization. And, the current historian shows us that the role of animal power in agriculture cannot be neglected.

[4 Jun 82, pp 11-12]

[Text] The Status of Draught Animals

What are the numbers of and what is the structure of these numbers of draught animals throughout the world - these are questions that can only be answered with approximations. According to the statistics of the FAO, at the end of 1980 in the world there were approximately 61 million horses, approximately 12 million donkeys and nearly 43 million mules (but lacking data regarding the other types of draught animals - oxen and buffaloes, yaks and llamas, goats and camels). According to certain semiofficial estimates,⁵ the number of draught camels would be 14 million, 150 million oxen and 58 million buffaloes. This would mean a total of approximately 338 million draught animals, which represents a significant power source and an important chapter in the fixed assets of world agriculture. Thus (excluding the mule), the large draught animals - oxen, buffaloes, horses, mules and camels - can provide the power of approximately .5 horsepower for 7-8 hours each day. As a result, the nearly 300 million large draught animals can daily provide approximately 150 million horsepower. And, since to build a power facility of one horsepower it is necessary to invest at least \$1,000, the replacement of draught animals would require an additional investment or, conversely, the existence of draught animals means a savings in investments of at least \$150 million, a nearly sensational figure if we keep in mind that to increase agricultural production in the developing nations up to the level of need it would be necessary to invest \$16-18 billion! Since the selling price of a draught animal varies between \$100 and \$500, even at the average price of only \$200 the value of the draught animals (without the llama, mule and so forth) is at least \$60 billion!

In the last decade (1969/71-1980), the number of horses has suffered a slight decrease (of 1,686,000 head, or 2.7 percent). Keep in mind the fact that this reduction is due exclusively to the socialist countries (4.2 million head), especially the countries in Eastern Europe and the Soviet Union (3.2 million head). Especially graphic in this phenomenon is the case of the greatest agricultural power in the world - the United States of America - which is in first place in the world with its more than 9.6 million horses! In other words, the country that has the largest number of tractors in the world (4,351,000 tractors) also has the largest number of horses. If for each

tractor there is 100 hectares of agricultural land or 43 hectares of arable land, for each horse there is 45 ha of agricultural land or 20 ha of arable land; if for each agricultural person there is .9 tractors and two horses, for each person actively working in agriculture there are two tractors and 4.4 horses!

With regards to mules and donkeys, whose numbers have remained approximately constant, there is a slight trend towards an increase in the developing nations.

Romania was once of the countries recognized in Europe, and especially by its neighbors, for the quality of its horses and oxen, which were much in demand on the foreign market. The specialized economic literature mentions the semiwild studs that existed earlier in our country, like in Dobrogea and in the pond regions in Ialomita and Teleorman counties (renown for the quality of the horses). The predominance of the small peasant farms under conditions of maintaining semifeudal forms in agricultural work, which blocked and slowed the technical revolution, transformed the draught animal into the principal power source in Romanian agriculture. In 1938 (when there were only 4,049 tractors), Romania had 1,581,000 horses (of which 644,000 were mares and 628,000 draught horses) and 829,000 oxen. The heavy losses suffered by the horses during the second world war were reflected in the status of draught animals in 1948: 1,035,000 oxen and 932,000 horses (of which only 697,000 were mares and draught animals). There followed a period of rebuilding the numbers of horses (in exchange reducing the number of draught oxen) so that in 1961 (on the evening of completing the cooperativization of agriculture) we had one million horses (of which 806,000 were mares and draught horses) and 520,000 draught oxen. The period immediately following the conclusion of the cooperativization of agriculture was characterized by a strong reduction in the number of draught animals so that in 1966 we had only 273,000 oxen and 689,000 horses (of which 585,000 were horses and mares over 3 years old).

The underappreciation of draught animals was translated not only into the unjustified reduction in their numbers, but also into the deterioration of the age structure. If in 1956 the young animal under 3 years of age represented 30 percent of the total numbers, in 1966 it was but 15 percent of the total, a fact that created clear difficulties for the process of replacing the animals that had been eliminated.

The process of reducing the numbers of horses continued so that (according to FAO data) in 1980 there were only 566,000 horses (plus 35,000 mules, whose numbers are on the rise, compared to the 31,000 in 1969/71). The last animal census, in 1982, indicates a rise in the number of horses - to 598,000 head.

Directions for Development

The first problem is that of selecting and using the most appropriate local conditions and species of draught animals, which requires knowing the advantages and disadvantages of each species. The FAO manual published in 1972 by the Center for the Study and Experimentation in Tropical Agrarian Mechanization (CEEMAT) characterizes them as follows:

The Horse. Advantages: it was a good work disposition and it becomes attached to its handler; it enjoys a certain amount of prestige which has caused agricultural producers to prefer it instead of the ox; it is easy to train to carry out all the categories of agricultural work; it is easy to lead, being a docile animal. Disadvantages: sometimes it is too light (up to 300 kg) which limits its power; it is especially fragile, requiring special attention in care, which is costly; it tires sufficiently quickly in working; it is expensive; it requires costly harnesses.

The Ox. Advantages: it is quiet, but untiring; it is tough, robust and easy to feed; it requires a simple harness, with the yoke being made with little costs on the local level; it is less costly (in many countries, the cost of a pair of oxen equals the cost of one horse); in rebuilding, after a period of fattening, it is sold and slaughtered for meat. Disadvantages: it does not have the good disposition of the horse; for feeding, it needs a relatively expansive pasture; it seems to be more difficult to train than the horse and requires more manpower; it moves slower than the horse in all agricultural work.

The Mule. Advantages: it has a good disposition, it is rustic; it is less costly and can be fed from the products of the farm; it is intelligent and easy to train; it is patient, especially in carrying out light pulling and transport work. Disadvantages: it is very light and, as a result, as limited power; it tires easily if it is handled too quickly; it is easily injured by a harness.

The harmonious combination of these main species of draught animals for our conditions is also determined by their power potential, whose correlation with energy consumption required for different types of work can give indications regarding the size of development of each separate species. According to the data presented in "Energy For World Agriculture," we have the following:⁶

- a light horse, weighing 400-700 kg, can reach an average working speed of 3,600 meters/hour, and develops a power of .75 kw or one horsepower;
- an ox, weighing 500-900 kg, has an average working speed of 2,160-3,240 m/h, with the amount of power being .56 kw or .75 horsepower;
- the same amount of power is developed by a 400-900 kg buffalo, with the lower speed, however, being 2,880 m/h;
- a cow, weighing 400-600 kg, travels with an average speed of 2,520 m/h, developing a power of .34 kw or .45 horsepower;
- a donkey weighing only 350-500 kg has a speed of 3,240-3,600 m/h, developing a power of .52 kw or .70 hp (being, therefore, relatively more powerful than the ox or buffalo and absolutely more powerful than the cow);

- the mule, weighing 200-300 kg, moves at an average speed equal to that of the cow (2,520 m/h), but, compared to its weight, develops much more power: .26 kw or .35 horsepower.

Clearly, the horse is the most appropriate one for transport, and the ox is best for agricultural work in the socialist agricultural units or in the private farms, while the mule gets the recommendation for the personal farms of the members of the cooperatives where the difficulty of the work does not exceed the mule's ability.

Under conditions where in pre-socialist Romania draught animals represented the main power source in agriculture, it is natural that the specialized literature was directed at the problem of the rational combination of the different species of draught animals depending upon their intrinsic qualities and the costs of caring for them, as well as the specific social-economic conditions in the countryside. Thus, N. O. Popovici-Lupa,⁷ in analyzing the production differences between the ox and the horse, arrives at the following rules: a) When we are talking about a faster rate of transport or over longer distances or on rocky, soft or not too smooth roads, horses are more useable than oxen. Similarly, they are preferred for harrowing and in carrying products; b) Horses are more appropriate for work where the intelligence and agility of the animal plays some kind of role; c) On the other hand, oxen are at least as good in plowing, they work a little less, but the work is more regular. For carrying wastes, green fodder and so forth, where the quickness of movement is not important, the oxen are nearly equal with the horse; d) For heavy loads on soft ground, for example, for moving hay from wet fields or swampy areas, oxen are better than horses (since their hooves do not go in as deeply and they do not get upset as quickly if somehow the cart does not move easily).

The costs for caring for the animals and especially the level of fodder consumption represent the fundamental criteria for optimizing the relationship between horses and oxen. The feeding of oxen is always cheaper than that for horses since they are, normally, satisfied with green fodder, hay, straw and roots. If they are not used as draught animals, the amount of fodder can be reduced, but when they are fed in a uniform manner their weight and, therefore, their value increase, especially since long breaks in using the yoke is not damaging to them. On the other hand, horses require grains in their feed, even when they are not working (which gives the proverb: "Oxen pull and horses eat"). Long periods of inactivity damage their health and ability to work (by way of the appearance of "dead bones"). Their care and harnesses are more expensive, and they use them and break them quickly. The feeding and caring for horses in their stables require more attention and time. They are more susceptible to diseases than oxen, and the costs required for shoeing are greater. The annual amortization climbs to 10-12 percent of their value at the time they are put in the stables, while for the oxen the amount is insignificant or even zero, if they are well-kept. Horses are used on the average for 8-10 years, and when they are recycled many times they have no value other than that of their hides. Oxen, on the other hand, if they pull the yoke for 3-4 years and are used for another 5 years, gain weight and their value is at least equal to their

initial value. On the basis of these considerations, George Maior concludes: "Oxen are and remain our principal working animal. Normally, our oxen are stronger than the native horses. And as a breed and regarding their work attitude, the oxen from Moldavia and the Transylvanian Plain are superior to all others since they are temperate and moderate when at rest, robust and very quick on their feet."⁸

Nonetheless, the costs per unit of work are influenced also by the period of use of the draught animals throughout the year: while a horse can be used 250-275 days per year, an ox can be used only 200-250 days (according to George Maior the limits vary between 280 and 300 days for horses and 220 to 250 days for oxen), in other words an ox is used 10-20 percent less than a horse.

On the basis of the above considerations, N. O. Popovici-Lupa recommended keeping only as many horses as could be used economically throughout the year, with the rest of the needed number of draught animals - needed at peak periods - being filled out with oxen, whose care during the winter costs less.

The second problem is, especially for the horse, that of the direction of production, including the selection of breeds. It is clear from the very beginning that local breeds must be used on a priority basis, avoiding resorting to imported breeds or those brought from the other end of the country where there are totally different socioeconomic and pedoclimatic conditions.

The failure to consider draught animals today places us in a problem of great current relevancy: the degeneration of the existing animals in production. This is the source of the need to intensify the activities of the 15 state stud farms (which have 1,400 mares), as well as those involved in scientific research for the creation of new types of horses for agriculture that will combine the power and docility of the large horse with the temperment and esthetics of the types of intermediary horses. The results obtained to date are expressed in:⁹

a) the creation of the semi-heavy Romanian horse, completed in 1980. Currently, we have 150 stallions for reproduction, which can produce 2,500-3,000 offspring each year;

b) the phase of creating the Bukovina horse (by crossing stallions with thick blood with mares of the Hutul breed) slated to provide draught animals for the hilly and mountainous regions. The result of this cross is a horse with greater pulling power, as required by the people, the army and forestry units. They are massive, harmonious and have an increased pulling power, combined with the rustic nature and strength of the Hutul horse, which has special qualities (a draught animal and a beast of burden, one which travels at approximately four km/hour on mountain trails and rough terrain);

c) the efforts to produce a Sport-type horse;

d) it is felt that the creation of the Romanian Pony (a cross between the Pony stallion and the female without the Hutul variety) should be done which will respond to the requirements for a draught animal and pleasure riding along the seacoast, as well as for summer tourism and winter tourism in the mountainous regions;

e) the resumption (after a break of 40 years) of research regarding trotters in the direction of increasing their power capacities in order to be competitive on the world scene. Furthermore, this research activity, which is carried out by the National Center for Raising and Training Breeding Horses (the center holding all the studs and stallion farms), was interrupted for a period of 20 years (1960-1980).

A problem of great significance in the economy of animal power is that of using it as fully as possible. Our people's centuries-long practice, as also expressed in specialized works, shows that in this field cooperation does not increase the animals' power. On the contrary, the tractive power is better used when they are harnessed or yoked to the same vehicle in small numbers since, in the case of a large numbers, their tractive effort is not fully used, but instead part of it is neutralized by opposite actions. Thus, if the power of a single harnessed horse equals 100, then two horses (of the same size and power) will not equal 200, but 160, and four horses will not reach 400, but rather only 300. At the same time, different species of animals should not be teamed together so as not to arrive in the situation in "The Crawfish, the Frog and the Pike!" Similarly, we must keep in mind that two horses pull what three oxen can pull, three horses what four oxen and so forth.

And, the fullest use of animal power also depends upon the construction of the vehicle being pulled, the type of harness and how the animals are teamed. These are problems which, on the worldwide level, enjoy clear attention. It is thus felt that the improvement of the transport cart (by using rubber or pneumatic tires and a lighter platform bed), along with the improvement of the harness, could double or even triple their transport capacity (from one ton to two to three tons). At the same time, the use of a comfortable harness that is adapted to the animal contributes to extending the life and activities of the animal by at least 1 year.

Problems that are considered "minor," but which have major negative repercussions, must be quickly resolved. We are talking about the technical-material base of draught animals, and especially horses: such traditional skills in the Romanian villages as the blacksmith and the saddlemaker are about to disappear. Obtaining a pair of harnesses has become a very great problem to resolve, just as it has become a similar problem to get iron nails for horseshoes. An industry that produces turbines for the hydro-power central at the Iron Gates does not produce simple nails!

The data of the recent census on animals shows a slight growth in the numbers of horses. Is this the forerunner of a reconsideration of draught animals, and especially the horse, in Romania's agriculture? This would be the wish of all those who are militating for the modernization of Romanian agriculture by all means, where draught animals can contribute to the growth of power and agricultural production to the levels of the requirements of the new agricultural revolution in Romania.

FOOTNOTES

1. Symptomatic from this point of view for me is the fact that such a scholarly work as "Energy for World Agriculture," written by B. A. Stout in cooperation with C. A. Myers, A. Hurand and L. W. Faidley and published by the FAO in Rome in 1979, a work which cites no less than 282 bibliographic sources, makes only banal references to draught animal power, on just one page. Similarly, the prestigious review published by the UN, FORUM DU DEVELOPEMENT, in an article in No 70/1981 limits itself to a passing statement: "Draught animals represent a source of power that is decentralized and renewable... (about which) there is little information... Draught animal power should not be neglected." UN sources, which this article mentions, only cites the current animal power in India (30×10^9 kwh) and presents global estimates for the year 2000 ($1,000 \times 10^9$ kwh). Further, the prestigious "FAO Yearbook on Production" presents total data regarding the numbers (by countries) of horses, donkeys, mules, cattle, cows and camels in such a way that you cannot get a true picture of the number of animals actually used as draught animals. With regards to the "Statistical Yearbook of the Socialist Republic of Romania," the number of draught animals was completely left out.

Under such conditions, "The Intermediary Report on the Power of Draught Animals," drawn up by professor N. S. Ramaswamy and presented at the second session (21 July-1 August 1980), as organized by the Preparatory Committee of the "United Nations Conference Regarding New and Renewable Sources of Energy," as well as the study "Animal Power for Agricultural Production Systems" by F. M. Inns and published in the review ZOOTECHNIE No 34/1980, are of a special documentary, conceptual and practical importance in the field of using animal power.

2. The agrarian economic thought in our country also anticipated this conclusion. At the moment between the two centuries, our great agrarian economist George Maior wrote: "No matter how much the inanimate power of steam, water and electricity might make headway in agriculture and in transportation and communications, nonetheless they will never be able to substitute for animal power... An economy with draught animals - although it is in part possible, replacing the animals with the power of steam in plowing, communications and transportation... replacing stable wastes with chemical fertilizers, nonetheless the experience to date here has proven that it cannot be maintained over time and to practice it for a long time will hurt the physical condition of the land... Without good and sufficient work animals systematic agriculture cannot be carried out."

3. Precisely on this basis, the Report of the Special Group for Rural Energy (including the use of energy in agriculture), drawn up by the Preparatory Group for the United Nations Conference Regarding New and Renewable Energy Sources and presented at the third session on 30 March - 17 April 1980, recommended: "Increased attention should be paid to animal power and the improvement of agricultural harnesses and instruments. Given the fact that large land areas are necessary in order to provide food to draught animals even when they are not working, the possibilities offered by this source of power are limited in the case of a scarcity of land, at least when the harvests do not have a very high level of efficiency. The use of draught animals also contributes to the achievement of the objective of intensifying production and increasing efficiency."
4. In this regard, see the article "Using Horses: The Present and The Future," by I. Teodoru in REVISTA ECONOMICA No 45/1970 (editor's note).
5. Preparatory Committee of the United Nations Conference Regarding New and Renewable Sources, the second session 21 July to 1 August 1980, the intermediary report on the power of draught animals (prepared by professor N. S. Ramaswamy), pp 7-8.
6. R. E. McDowell, "Report of the National Dairy Research Institute," UNDP/UNESCO/1975, p 4.
7. N. O. Popovici-Lupa, "Elements of the Rural Economy for the Use of Agriculturists and Scholars in Agriculture," Vol I, MIJLOACELE DE EXPLOATATIE AGRICOLA, issue 1, Bucharest, 1912, pp 199-202.
8. George Maior, "The Rural Economy or the Organization and Administration of Large and Small Estates," Bucharest, 1909, p 191.
9. E. Calinescu, "The Current and Future Problems of Scientific Research in the Field of Horse Raising," REVISTA DE CRFSTEREA ANIMALELOR, Nr 6/1981.

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YUGOSLAVIA

WEST GERMAN COMMENT ON ECONOMIC SITUATION

Frankfurt/Main FRANKFURTER ALLGEMEINE in German 5 Jun 82 p 6

[Article by Viktor Meier: "Belgrade Has Faith in a Fresh Start"]

[Text] Belgrade, 4 Jun--The inauguration of the new Yugoslavian government under Milka Planinc is attended in Belgrade by the feeling that, in some areas at least, a fresh start is now possible. It is true that people are saying of the departing head of government, the Montenegrin Djuranovic, that he tried his best and was not without some success, principally he succeeded in drawing the attention of all circles in the country to its economic difficulties. Just a short time before its resignation, the old government brought the new currency law through parliament, which gives the national bank a stronger position with respect to the trade banks, firms up financial discipline among foreign businesses and establishes a general required quota of just under 16 percent of currency income to go to the central bank to meet Yugoslavia's foreign obligations. The prerogatives of the companies and in particular of the republic were basically preserved.

The adoption of this new law will make it easier for the new government to begin work, particularly as the question of Yugoslavia's foreign debt again seems to be turning into the biggest economic concern. According to the latest figures, Yugoslavia's debt is more than \$18 billion, almost \$17 billion of which is to the hard currency area. In the current year, Yugoslavia will have to spend about \$2.3 billion just to pay the interest on its debts, and about the same amount again to repay obligations due. The interest alone amounts to more than the total income from tourism in the past year. A nervous feeling predominates in the economic and financial offices of the new government. It is certain that Yugoslavia will again have to take out new credits this year. Maintaining foreign credit has become an important objective of Yugoslavian economic policy. The figures for the first 4 months of this year show that the country has still not succeeded in increasing exports to the hard currency countries to the desired extent. These exports rose nominally by 5 percent, compared with the same period last year, which is equivalent to stagnation. Imports from industrialized countries dropped in the same period by 11 percent, as a result of the rigorous steps that were taken. That means great difficulties for many factories in procuring raw materials.

Some foreign institutions, such as the EEC and the OECD, had publicly praised the success of Yugoslavia's stabilization policy in the first months of this year. In Belgrade reliable sources say that this was intended principally as encouragement.

There is not complete agreement among the foreign experts in Belgrade about how the International Monetary Fund is setting priorities. One hears that, in the case of Yugoslavia, it was less a matter of moderating inflation and of achieving a purely numerical reduction in the balance of payment deficit, but rather of attaining these objectives through the free effect of market forces and through an actual increase in exports to hard currency countries. Instead, the formalist attitude of the International Monetary Fund had steered Yugoslavia onto the path of administrative price controls and simple import restrictions.

The effects of this will probably be felt all the sooner, since attempts have failed to create within the party for the 12th party congress at the end of June, the first congress since Tito's death, the conditions for a fundamental reform of the economic system. The country's economic system, established and laid down ideologically in broad areas by ideologue-in-chief Kardelj, who died before Tito, condemned Yugoslavian enterprises to prorated production costs and thus diverts it to the inflated domestic market or to the East.

Yugoslavian politicians, who for reasons of power have a great interest in not deviating a single centimeter from "Tito's way," are resisting reform and claim that they are opposing "self administration." As a result, very few preparations could be made in the economic area within the party prior to the congress. Still, there are forces pushing in the direction of the urgently needed reforms to the system. On the one part they are coming from economists, on the other from the so-called "Kragjer Commission," the commission founded under the chairmanship of the former head of state and made up on a broad basis of politicians and experts concerned with the long-term stabilization program. The Macedonian Kiro Gligorov has been able to make a name for himself again in this commission, after he had to leave the influential ruling circle a few years ago. The impression of many observers is that Gligorov set up his own economic counterthesis to the document of the party congress, which was restricted to generalities, with his report to the commission. The Serbian leadership has made similar criticisms of the economic theses of the party congress.

This attitude brings up the question, among other things, of what the role and the situation of the party will be in the spectrum of political institutions in the future. As far as economic policy is concerned, the initiative is clearly with the government or with the state presidium or with the republics. The majority of the republican party congresses, which customarily precede the party congress, have been concluded. Occasionally there were feelings of resentment from individual parts of the country, but they also produced very few progressive elements. They showed too that a dividing line separates the Yugoslavian republics. The leaderships of Bosnia, Herzegovina and Croatia form a kind of "dogmatic bloc," which sets itself apart from the liberal republics and often opposes them.

The new chairman of the Federal Executive Council, as the government is officially called, the former Croatian party chairman Planinc, appears herself to be a prisoner of this confrontation. She belongs to the group in Croatia, which in 10 years has not succeeded in restoring an identity to the Croatian nation. At the Croatian party congress she delivered a dogmatic speech, in which "counterrevolutions" and the like were mentioned constantly. Her candidate for the new minister of information

had been the functionary Sima Kronja, who vehemently opposed the more liberal tone of the newspapers in Serbia, who described the movement of Serbs from Kosovo as "natural migrations from the underdeveloped south to the developed north" and who had become entangled in serious arguments because of his opinions. His election was prevented, but the new Prime Minister has put herself in an unfavorable light in different circles through such maneuvers and has probably made her task, which was not easy to begin with, even more difficult.

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